

# **EXHIBIT 27**

Judith K. Wolf, M.D.

Page 1

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF NEW JERSEY

IN RE: JOHNSON & :  
JOHNSON TALCUM POWDER :  
PRODUCTS MARKETING, :  
SALES PRACTICES, AND :  
PRODUCTS LIABILITY : CASE NO. 16-2738  
LITIGATION : (FLW) (LHG)  
:  
THIS DOCUMENT RELATES :  
TO ALL CASES :  
:  
MDL Docket No. 2738 :

- - -

Monday, January 7, 2019

- - -

Videotaped Oral Deposition of  
JUDITH K. WOLF, M.D. taken pursuant to  
notice, was held at the Hilton Austin, 500  
East 4th Street, Austin, Texas, beginning at  
9:08 a.m., on the above date, before Micheal  
A. Johnson, Registered Diplomate Reporter,  
Certified Realtime Reporter, and Notary  
Public for the State of Texas.

- - -

Judith K. Wolf, M.D.

Page 2	Page 4
<p>1 APPEARANCES: 2 BEASLEY ALLEN, PC 3 BY: P. LEIGH O'DELL, ESQUIRE 4 leigh.odell@beasleyallen.com 5 Margaret M. Thompson, ESQUIRE 6 margaret.thompson@beasleyallen.com 7 218 Commerce Street 8 Montgomery, Alabama 36104 9 (334) 269-2343 10 Counsel for Plaintiffs' Steering 11 Committee 12 13 ROBINSON CALCAGNIE, INC. 14 BY: CYNTHIA L. GARBER, ESQUIRE 15 cgarber@robinsonfirm.com 16 19 Corporate Plaza Drive 17 Newport Beach, California 92660 18 (949) 720-1288 19 Counsel for Plaintiffs' Steering 20 Committee 21 22 BLOOD HURST &amp; O'REARDON LLP 23 BY: PAULA R. BROWN, ESQUIRE 24 pbrown@hbolaw.com 501 West Broadway, Suite 1490 San Diego, California 92101 (619) 338-1100 Counsel for Plaintiffs' Steering Committee  WEIL, GOTSHAL &amp; MANGES LLP BY: ALLISON M. BROWN, ESQUIRE allison.brown@weil.com 17 Hulfish Street, Suite 201 Princeton, New Jersey 08542-3792 (609) 986-1104 Counsel for Johnson &amp; Johnson entities</p>	<p>1 APPEARANCES: 2 SEYFARTH SHAW, LLP 3 BY: RENEE B. APPEL, ESQUIRE 4 rappel@seyfarth.com 5 975 F Street, N.W. 6 Washington, D.C. 20004-1454 7 (202) 463-2400 8 Counsel for Personal Care Products 9 10 VIDEOGRAPHER: 11 12 Shane Ramirez, 13 Golkow Litigation Services 14 15 - - - 16 17 18 19 20 21 22 23 24</p>
Page 3	Page 5
<p>1 APPEARANCES: 2 WEIL, GOTSHAL &amp; MANGES LLP 3 BY: ALEXIS KELLERT, ESQUIRE 4 alexis.kellert@weil.com 5 767 Fifth Avenue 6 New York, New York 10153-0119 7 (212) 310-8468 8 Counsel for Johnson &amp; Johnson entities 9 10 DRINKER BIDDLE &amp; REATH, LLP 11 BY: KATHERINE MCBETH, ESQUIRE 12 katherine.mcbeth@dbb.com 13 One Logan Square, Suite 2000 14 Philadelphia, Pennsylvania 19103-6996 15 (215) 988-2706 16 Counsel for Johnson &amp; Johnson entities 17 18 GORDON REES SCULLY MANSUKHANI LLP 19 BY: MICHAEL R. KLATT, ESQUIRE 20 mklatt@gordonrees.com 21 816 Congress Avenue, Suite 1510 22 Austin, Texas 78701 23 (512) 391-0197 24 Counsel for Imerys Talc America  COUGHLIN DUFFY LLP BY: MARK K. SILVER, ESQUIRE msilver@coughlinduffy.com 350 Mount Kemble Avenue Morristown, New Jersey 07962 (973) 267-0058 Counsel for Imerys Talc America  TUCKER ELLIS LLP BY: TARIQ M. NAEEM, ESQUIRE tariq.naeem@tuckerellis.com 950 Main Avenue, Suite 1100 Cleveland, Ohio 44113-7213 (216) 696-3675 Counsel for Pharmatech ("PTI")</p>	<p>1 INDEX 2 JUDITH K. WOLF, M.D. 3 January 7, 2019 4 5 APPEARANCES 2 6 PROCEEDINGS 9 7 8 EXAMINATION OF JUDITH K. WOLF, M.D.: 9 10 BY MS. BROWN 9 11 BY MR. KLATT 388 12 BY MS. O'DELL 446 13 BY MS. BROWN 461 14 BY MR. KLATT 470 15 BY MS. O'DELL 482 16 BY MS. BROWN 482 17 18 CERTIFICATE 485 19 ACKNOWLEDGMENT OF DEPONENT 486 20 ERRATA 487 21 LAWYER'S NOTES 488 22 23 24</p>

2 (Pages 2 to 5)

Golkow Litigation Services - 877.370.DEPS

Page 6				Page 8			
1	DEPOSITION EXHIBITS			1	DEPOSITION EXHIBITS		
2	JUDITH K. WOLF, M.D.			2	JUDITH K. WOLF, M.D.		
3	January 7, 2019			3	January 7, 2019		
4	NUMBER	DESCRIPTION	MARKED	4	NUMBER	DESCRIPTION	MARKED
5	Exhibit 1	Notice of Oral and	11	5	Exhibit 17	Genital use of talc and	247
6		Videotaped Deposition of		6		risk of ovarian cancer:	
7	Exhibit 2	Reprint from UpToDate,	12	7	Exhibit 18	Ovarian, Fallopian Tube,	272
8		Evidence-based medicine		8		and Primary Peritoneal	
9	Exhibit 3	IARC Monographs on the	31	9		Cancer Prevention (PDQ)	
10		Evaluation of		10	Exhibit 19	African-Americans and	294
11	Exhibit 4	Reproductive Sciences,	35	11		Hispanics Remain at	
12		Original Manuscripts		12		Lower Risk of Ovarian	
13	Exhibit 5	Invoices for TALC MDL	36	13		Cancer Than Non-Hispanic	
14	Exhibit 6	Curriculum Vitae	52	14		Whites after Considering	
15	Exhibit 7	Rule 26 Expert Report of	66	15	Exhibit 20	The Future of Ovarian	350
16	Exhibit 8	Rule 26 Expert Report of	100	16		Cancer Diagnosis Is Now	
17		Ellen Blair Smith, MD		17		- Through These 4	
18	Exhibit 9	FDA.gov, Ingredients,	128	18	Exhibit 21	How to find the best	353
19	Exhibit 10	Excerpt from Arsenic,	157	19		doctor for ovarian	
20		Metals, Fibres, and		20	Exhibit 22	Arsenic, Metals, Fibres,	427
21		Dusts, IARC Monographs		21		and Dusts, IARC	
22		on the Evaluation of		22		Monographs on the	
23		Carcinogenic Risks to		23		Evaluation of	
24		Humans		24		Carcinogenic Risks to	
						Humans	
Page 7				Page 9			
1	DEPOSITION EXHIBITS			1	PROCEEDINGS		
2	JUDITH K. WOLF, M.D.			2	THE VIDEOGRAPHER: Here begins		
3	January 7, 2019			3	the deposition of Dr. Judy Wolf.		
4	NUMBER	DESCRIPTION	MARKED	4	Today's date is January 7th, 2019.		
5	Exhibit 11	The Association Between	198	5	The time is 9:08 a.m.		
6		Talc Use and Ovarian		6	Will the court reporter please		
7		Cancer, A Retrospective		7	swear in the witness.		
8	Exhibit 12	The relationship between	213	8	JUDITH K. WOLF, M.D.,		
9		perineal cosmetic talc		9	called as a witness, having been duly sworn		
10		usage and ovarian talc		10	by a Notary Public, was examined and		
11	Exhibit 13	IARC Monographs on the	224	11	testified as follows:		
12		Evaluation of		12	EXAMINATION		
13		Carcinogenic Risks to		13	BY MS. BROWN:		
14		Humans, Volume 93,		14	Q.	Good morning, Dr. Wolf.	
15	Exhibit 14	April 1, 2014, Letter,	233	15	A.	Good morning.	
16		Steven Musser to Samuel		16	Q.	My name is Ally Brown and I	
17	Exhibit 15	American Association for	238	17		represent Johnson & Johnson, and I'll start	
18		Cancer Research,		18		with some questions for you here today.	
19		Research Article,		19		Okay?	
20		Association between Body		20	A.	Okay.	
21		Powder Use and Ovarian		21	Q.	Have you ever been deposed	
22		Cancer: The African		22		before?	
23		American Cancer		23	A.	One time.	
24	Exhibit 16	Perineal Talc Use and	245	24	Q.	And when was that?	
		Ovarian Cancer, A					
		Systematic Review and					
		Meta-Analysis					

Judith K. Wolf, M.D.

Page 10	Page 12
<p>1 A. That was -- I want to say, was 2 nearly three years ago. It was a wrongful 3 termination case at a hospital I used to 4 work. 5 Q. And were you the plaintiff in 6 that case? 7 A. No. 8 Q. Okay. Were you a witness in 9 that case? 10 A. A witness. 11 Q. Okay. And you're probably 12 familiar with some of the rules of a 13 deposition, having done this not too long 14 ago, but I'll just remind you a little bit. 15 A. Okay. 16 Q. We'll try and talk one at a 17 time, so that the court reporter can get down 18 all of my questions and all of your answers. 19 Do you understand that you are under oath 20 here today same as if you were in a court of 21 law? 22 A. Yes. 23 Q. Okay. If you don't understand 24 one of my questions, will you let me know?</p>	<p>1 today, you were -- the attorney representing 2 plaintiffs provided me with a number of 3 documents in request to this notice that I'd 4 like to mark and ask you about. 5 A. Okay. 6 Q. And so the first one we'll mark 7 as Exhibit 2 to your deposition. 8 (Deposition Exhibit 2 marked 9 for identification.) 10 BY MS. BROWN: 11 Q. Which is an UpToDate printout 12 from January 5th, 2019. 13 A. Yes. 14 Q. We only have one copy, so let 15 me hand it to you and ask you to describe 16 what Exhibit 2 is. 17 A. This is an article from 18 UpToDate that describes what evidence-based 19 medicine is, which is -- I provided because 20 this is how I reviewed the subject and how I 21 review any subject when I'm looking to treat 22 a patient or taking care of a patient or 23 working on a research project, and I thought 24 that this was a good outline and description</p>
Page 11	Page 13
<p>1 A. Yes. 2 Q. And if you go ahead and answer 3 them, is it fair to assume you understood 4 what I was asking? 5 A. Yes. 6 Q. Okay. We'll take breaks 7 throughout the day. It's not a marathon, so 8 just let me know if you need a break and 9 we'll be happy to accommodate you. Okay? 10 A. Okay. 11 Q. I'm handing you, Dr. Wolf, what 12 we have marked as Exhibit 1 to your 13 deposition, which is the notice of your 14 deposition. 15 (Deposition Exhibit 1 marked 16 for identification.) 17 BY MS. BROWN: 18 Q. Have you seen this document 19 before? 20 A. Yes. 21 Q. Okay. And when was that? 22 A. I saw it several days ago. I 23 can't remember exactly when. 24 Q. Okay. And prior to starting</p>	<p>1 of what I do. 2 Q. Do you consider UpToDate to be 3 a reliable source in your field? 4 A. I think it's a -- 5 MS. O'DELL: Object to form. 6 A. I believe it's a good starting 7 place. If I read something on UpToDate and I 8 want something more in depth, the first thing 9 I usually do is go to the references and look 10 at those. If -- and if I want more 11 information and there's an UpToDate, I'll do 12 a general PubMed literature search to find 13 other articles. 14 BY MS. BROWN: 15 Q. As part of your methodology in 16 your report that we're here to talk about 17 today in the MDL, did you employ the 18 evidence-based medicine approach described in 19 Exhibit 2? 20 A. Yes. 21 Q. And describe that for us 22 briefly, if you would. 23 A. So first is formulating a 24 question and the question is, does talcum</p>

4 (Pages 10 to 13)

Judith K. Wolf, M.D.

<p style="text-align: right;">Page 14</p> <p>1 powder product cause ovarian cancer? And</p> <p>2 then the next part is finding the available</p> <p>3 evidence, which is, for me, looking at the</p> <p>4 literature that I had at my house to start,</p> <p>5 going on PubMed and searching literature,</p> <p>6 looking at references from those, going --</p> <p>7 finding more literature from the references</p> <p>8 that I pulled. Some references were provided</p> <p>9 by the attorneys, some other information that</p> <p>10 I asked for, they provided. And so trying to</p> <p>11 go through as many sources as I could find,</p> <p>12 to find as much information about the topic</p> <p>13 that I could find, both in human studies and</p> <p>14 in vitro studies and in animal studies.</p> <p>15 Q. And so if I understand your</p> <p>16 methodology, it was first formulating a</p> <p>17 question?</p> <p>18 A. Yes.</p> <p>19 Q. Is that right? And the</p> <p>20 question at issue as it relates to this MDL</p> <p>21 report was, does genital application of</p> <p>22 talcum powder cause cancer; is that right?</p> <p>23 A. Does genital -- does talcum</p> <p>24 powder product cause ovarian cancer.</p>	<p style="text-align: right;">Page 16</p> <p>1 but if there's talcum powder in them, yes.</p> <p>2 Q. Okay. What about tampons or</p> <p>3 other feminine products that contain talcum</p> <p>4 powder? Are you including that in your</p> <p>5 definition of a "talcum powder product"?</p> <p>6 A. Again, I haven't really thought</p> <p>7 about tampons as containing talcum powder as</p> <p>8 a possibility, so I would say I hadn't</p> <p>9 considered that.</p> <p>10 Q. Okay. What about talc-dusted</p> <p>11 condoms? Are you including that in your</p> <p>12 definition of a "talcum powder product"?</p> <p>13 A. I am, but my understanding is,</p> <p>14 that since the '90s, that practice has</p> <p>15 stopped because of concerns.</p> <p>16 Q. And tell me what you're relying</p> <p>17 on for that understanding.</p> <p>18 A. I have a reference in my</p> <p>19 report. I have to look up the name of the</p> <p>20 author.</p> <p>21 Q. Okay. And the reference in</p> <p>22 your report is actually to an internal PCP</p> <p>23 document. Is that what you're relying on for</p> <p>24 your understanding that condoms no longer</p>
<p style="text-align: right;">Page 15</p> <p>1 Q. That's the question that you</p> <p>2 endeavored to answer in your report?</p> <p>3 A. Yes.</p> <p>4 Q. Is that right?</p> <p>5 A. Yes.</p> <p>6 Q. And when you say talcum -- does</p> <p>7 talcum powder cause ovarian cancer, do you</p> <p>8 have a particular product in mind?</p> <p>9 A. I'm thinking about talcum</p> <p>10 powder product in general.</p> <p>11 Q. And how do you define a "talcum</p> <p>12 powder product"?</p> <p>13 A. Anything that comes in a powder</p> <p>14 form that people might apply to their body or</p> <p>15 someone else's body.</p> <p>16 Q. What about deodorizing sprays</p> <p>17 that contain talcum powder? Do you include</p> <p>18 that in your definition?</p> <p>19 A. I would include that in my</p> <p>20 definition.</p> <p>21 Q. Okay. What about soaps that</p> <p>22 contain talcum powder? Would you include</p> <p>23 that in your definition as well?</p> <p>24 A. I hadn't thought about that,</p>	<p style="text-align: right;">Page 17</p> <p>1 contain talcum powder?</p> <p>2 A. No. Well, can I look at my</p> <p>3 report for a second?</p> <p>4 Q. Absolutely.</p> <p>5 (Witness reviews document.)</p> <p>6 A. There are actually references</p> <p>7 above the PCP report, talking about concerns</p> <p>8 of ovarian cancer and talc on condoms, Kang,</p> <p>9 Griffin and Ellis, Casper and Chandler.</p> <p>10 BY MS. BROWN:</p> <p>11 Q. And for the record, Doctor,</p> <p>12 what page are you on?</p> <p>13 A. I'm on page 5.</p> <p>14 Q. Okay. And your understanding</p> <p>15 that condoms no longer are dusted with talc</p> <p>16 comes from Kang, Griffin and Ellis 1992, and</p> <p>17 Casper and Chandler 1995, as well as an</p> <p>18 internal PCPC document and McCullough in</p> <p>19 1996; is that right?</p> <p>20 A. My understanding that there was</p> <p>21 concern about talcum powder on condoms is</p> <p>22 from the Kang, the Griffin and the Casper</p> <p>23 articles, and then my understanding about</p> <p>24 stopping dust in condoms was from the PCP</p>

5 (Pages 14 to 17)

<p style="text-align: right;">Page 18</p> <p>1 document and the McCullough document.</p> <p>2 Q. Have you reviewed the</p> <p>3 epidemiology as it relates to whether or not</p> <p>4 there is an increased risk for ovarian cancer</p> <p>5 as a result of talc-dusted condoms?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. The papers, the Kang, the</p> <p>9 Griffin and the Casper paper, that's part of</p> <p>10 what they were looking at.</p> <p>11 BY MS. BROWN:</p> <p>12 Q. And are you familiar with what</p> <p>13 the conclusion of the body of studies looking</p> <p>14 at talc-dusted condoms in ovarian cancer</p> <p>15 conclude?</p> <p>16 MS. O'DELL: Dr. Wolf, if</p> <p>17 you -- you have your records here. If</p> <p>18 you'd like to look at them, you're</p> <p>19 certainly welcome to do that.</p> <p>20 THE WITNESS: Let me get that.</p> <p>21 BY MS. BROWN:</p> <p>22 Q. Doctor, if you would, just</p> <p>23 identify the document you're looking at for</p> <p>24 us on the record.</p>	<p style="text-align: right;">Page 20</p> <p>1 directly talk about ovarian cancer, but the</p> <p>2 fact that the powder causes inflammation</p> <p>3 would lead me to be concerned about that.</p> <p>4 Q. Okay. And we're going to talk</p> <p>5 about inflammation. But you cited this Kang</p> <p>6 paper for the proposition that concerns were</p> <p>7 raised in the medical literature regarding</p> <p>8 ovarian cancer for talc being used on</p> <p>9 condoms. Does this paper speak to that in</p> <p>10 your mind, Doctor?</p> <p>11 MS. O'DELL: Object to the</p> <p>12 form, asked and answered.</p> <p>13 A. It specifically talks about</p> <p>14 inflammation from this, which inflammation is</p> <p>15 related to ovarian cancer.</p> <p>16 BY MS. BROWN:</p> <p>17 Q. Is it your understanding,</p> <p>18 Doctor, that all inflammation leads to</p> <p>19 ovarian cancer?</p> <p>20 A. It's my understanding, from</p> <p>21 reviewing the literature and my own knowledge</p> <p>22 from practicing GYN oncology and doing the</p> <p>23 research in it over the years, is that it's</p> <p>24 more the concern of chronic inflammation</p>
<p style="text-align: right;">Page 19</p> <p>1 A. So I'm looking at the Kang,</p> <p>2 Griffin and Ellis paper right now.</p> <p>3 Q. Okay. Great.</p> <p>4 (Witness reviews document.)</p> <p>5 A. Now I'm looking at the Casper</p> <p>6 paper.</p> <p>7 BY MS. BROWN:</p> <p>8 Q. And before we move the -- move</p> <p>9 from the Kang paper, Doctor, is there</p> <p>10 anything in the Kang paper that informs your</p> <p>11 view about whether or not there's an</p> <p>12 increased risk of ovarian cancer with</p> <p>13 talc-dusted condoms?</p> <p>14 A. This paper is just looking at</p> <p>15 the pathologic changes from talc powder on</p> <p>16 gloves or condoms and is looking at</p> <p>17 pathologic changes in the intraabdominal</p> <p>18 cavity. It doesn't specifically look at the</p> <p>19 risk of ovarian cancer.</p> <p>20 Multiple other papers, both</p> <p>21 prior and subsequent to this, though,</p> <p>22 indicate that inflammation is an important</p> <p>23 part in the development of ovarian cancer,</p> <p>24 and so it does -- this paper does not</p>	<p style="text-align: right;">Page 21</p> <p>1 versus acute inflammation.</p> <p>2 When I look at the pathology of</p> <p>3 ovarian tumors, sometimes we see a lot of</p> <p>4 chronic, sometimes we see a mix of chronic</p> <p>5 and acute inflammation, sometimes you don't</p> <p>6 see inflammation. That doesn't mean it's not</p> <p>7 there; it just means it's not there in the</p> <p>8 slide that you're looking at. But in</p> <p>9 general, more concern about chronic</p> <p>10 inflammation.</p> <p>11 Q. Because, Doctor, you would</p> <p>12 agree, that you can certainly have</p> <p>13 inflammation that does not cause cancer,</p> <p>14 right?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. Inflammation itself doesn't</p> <p>18 always cause cancer. However, inflammation</p> <p>19 has been correlated with the development of</p> <p>20 ovarian cancer in multiple studies, and since</p> <p>21 the '30s, it's been suggested in the</p> <p>22 implication of all cancers -- or many cancers</p> <p>23 anyway. I'll stop there.</p> <p>24</p>



<p style="text-align: right;">Page 22</p> <p>1 BY MS. BROWN: 2 Q. Would you agree, Doctor, that 3 the inflammation that was being caused by 4 powders on surgical gloves was not 5 inflammation that was -- was suspected of 6 leading to cancer? 7 MS. O'DELL: Object to the 8 form. 9 A. I can't -- I don't know that I 10 can say that, because if there's deposits of 11 talc from the surgical gloves into the 12 abdominal cavity and it stays there because 13 it's not dissolved, that can lead to chronic 14 inflammation. 15 BY MS. BROWN: 16 Q. Do you have any -- can you cite 17 any evidence in the medical literature of 18 talc from surgical gloves causing a 19 procancerous inflammatory response? 20 MS. O'DELL: Object to the 21 form. 22 A. Can you define for me what you 23 mean by a "procancer inflammatory response"? 24 BY MS. BROWN:</p>	<p style="text-align: right;">Page 24</p> <p>1 BY MS. BROWN: 2 Q. Just for the record, Doctor, 3 the lawyer for the plaintiffs has asked that 4 you be able to look at the transcript of my 5 questions and your answers, to assist you 6 with your testimony under oath here today; is 7 that right? 8 MS. O'DELL: No, actually, 9 she's -- she's had it there, not to 10 assist her, but just to make sure 11 she's read the -- understood the 12 question correctly. I'll put it that 13 way. You can answer. 14 BY MS. BROWN: 15 Q. Just for the record, you'll be 16 looking at the realtime questions and answers 17 and testifying here today; is that right? 18 A. That's my understanding, yes. 19 So now I'm going to have to ask 20 you to repeat the question. 21 Q. Fair enough, Doctor. We were 22 talking a little bit about talcum powder on 23 surgical gloves. Do you remember that? 24 A. Yes.</p>
<p style="text-align: right;">Page 23</p> <p>1 Q. Sure. Can you cite us any 2 evidence in the medical literature that talc 3 from surgical gloves led to chronic 4 inflammation that caused cancer. 5 MS. O'DELL: Object to the 6 form. 7 A. I can cite literature that talc 8 from surgical gloves causes inflammation and 9 there is the concern that it leads to cancer. 10 BY MS. BROWN: 11 Q. Okay. And for the proposition, 12 the second part of what you're testifying 13 about, the concern that surgical gloves were 14 causing, not just granulomas or adhesions or 15 foreign body reactions, but cancer, but what 16 literature are you relying on for that 17 proposition? 18 MS. O'DELL: Object to the 19 form. Excuse me just for a minute. 20 Micheal, would you make the screen -- 21 I don't know how that -- 22 THE WITNESS: So I can see it. 23 MS. O'DELL: Yes. 24</p>	<p style="text-align: right;">Page 25</p> <p>1 Q. And is it your opinion that 2 talcum powder that was used on surgical 3 gloves could lead to cancer? 4 A. It's my opinion that talcum 5 powder generally has a concern for 6 carcinogenesis, and because it was known to 7 cause inflammation in adhesions, it has been 8 removed from surgical gloves and from 9 condoms. 10 Q. And what are you relying on for 11 your understanding that dusting powders were 12 removed from surgical gloves because of a 13 concern for cancer? 14 A. I believe that we've already 15 talked about that, the PCPC report that's 16 referenced on page 5 in my report. 17 Q. Okay. So that's an internal 18 company document that you cite in connection 19 with condoms, right? 20 A. Yes. 21 Q. Okay. And so my question was a 22 little bit different, which is, what 23 scientific literature are you relying on to 24 support your opinion that dusting powder on</p>



Judith K. Wolf, M.D.

<p style="text-align: right;">Page 26</p> <p>1 surgical gloves can lead to cancer?</p> <p>2 MS. O'DELL: Object to the</p> <p>3 form.</p> <p>4 A. I'm going to give you the same</p> <p>5 answer that I think I've given before is</p> <p>6 that, the concern is that dusting powder on</p> <p>7 surgical gloves has been shown to cause</p> <p>8 inflammation and then that inflammation can</p> <p>9 lead to cancer.</p> <p>10 BY MS. BROWN:</p> <p>11 Q. And my question's just a little</p> <p>12 bit different, which is, I'm asking you to</p> <p>13 identify the scientific literature on which</p> <p>14 you rely for that opinion, and "that opinion"</p> <p>15 being that powders on surgical gloves can</p> <p>16 cause cancer?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form, asked and answered. That's</p> <p>19 probably the third time the question's</p> <p>20 been repeated.</p> <p>21 Dr. Wolf, you're welcome to</p> <p>22 respond to the question.</p> <p>23 A. I have the same answer that I</p> <p>24 gave before. And powder has been removed</p>	<p style="text-align: right;">Page 28</p> <p>1 A. So the studies suggest -- or</p> <p>2 show inflammation after talcum powder on --</p> <p>3 or talc, talcum powder product on surgical</p> <p>4 gloves, dusting powder, and therefore it was</p> <p>5 taken off the market. I am not aware of a</p> <p>6 study where talcum-dusted, dusting powdered</p> <p>7 gloves was used to see if it caused cancer.</p> <p>8 I believe that would be unethical. And so</p> <p>9 the concern that there is inflammation was</p> <p>10 enough that that was pulled off the market.</p> <p>11 Q. Okay. And when you talk about</p> <p>12 "unethical," you're talking about running a</p> <p>13 randomized, controlled clinical trial, right?</p> <p>14 A. A prospective study of any</p> <p>15 kind.</p> <p>16 Q. Sure. And certainly it would</p> <p>17 not be unethical to look at people who have</p> <p>18 had operations with surgical gloves to study</p> <p>19 this issue, correct?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 A. So you're -- could you</p> <p>23 retrospectively look and see if people who</p> <p>24 had surgery with powdered gloves got cancer</p>
<p style="text-align: right;">Page 27</p> <p>1 from surgical gloves because of the concern</p> <p>2 of adhesions and inflammation.</p> <p>3 BY MS. BROWN:</p> <p>4 Q. I understand that testimony</p> <p>5 perfectly. And maybe we're just not</p> <p>6 connecting, Dr. Wolf. I understand your</p> <p>7 opinion, and what I'm asking is, for the</p> <p>8 scientific support for that opinion. And so</p> <p>9 what information are you relying on that</p> <p>10 dusting powders on surgical gloves can cause</p> <p>11 cancer?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form, asked and answered the sixth</p> <p>14 time.</p> <p>15 A. My understanding is what you're</p> <p>16 asking me is, can I cite you a paper that</p> <p>17 says that dusting powder on surgical gloves</p> <p>18 causes cancer?</p> <p>19 BY MS. BROWN:</p> <p>20 Q. My question to you is, what is</p> <p>21 the scientific support, what articles in the</p> <p>22 scientific literature, what studies have you</p> <p>23 looked at that brings you to that conclusion?</p> <p>24 If it's a paper, then we'll take the paper.</p>	<p style="text-align: right;">Page 29</p> <p>1 more than those that did not? Is that what</p> <p>2 you're asking me?</p> <p>3 BY MS. BROWN:</p> <p>4 Q. Sure. What I'm trying to clear</p> <p>5 up is, you didn't mean to suggest this is an</p> <p>6 area of science that cannot be studied.</p> <p>7 Fair?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. My suggestion would be that it</p> <p>11 would be an area of study that would be</p> <p>12 challenging to study. I'm not saying it</p> <p>13 couldn't be. I'm saying it could be</p> <p>14 challenging.</p> <p>15 BY MS. BROWN:</p> <p>16 Q. Have you reviewed, in</p> <p>17 connection with your opinions in this case,</p> <p>18 the reasoning of the FDA when they banned</p> <p>19 powders on surgical gloves?</p> <p>20 A. I don't recall that I have.</p> <p>21 Q. Are you aware of whether or not</p> <p>22 the FDA made a determination about whether or</p> <p>23 not the science supported your opinion here,</p> <p>24 that use of powders on gloves can lead to</p>

Page 30	Page 32
<p>1 cancer?</p> <p>2 A. I don't recall.</p> <p>3 Q. Do you consider the FDA to be a</p> <p>4 reliable public health authority?</p> <p>5 MS. O'DELL: Object to the</p> <p>6 form.</p> <p>7 A. I consider that the FDA does</p> <p>8 its best to be a reliable health authority.</p> <p>9 The FDA, or any agency, is not without the</p> <p>10 ability to make a wrong decision or a</p> <p>11 decision that they later change.</p> <p>12 BY MS. BROWN:</p> <p>13 Q. Do you consider the work that</p> <p>14 scientists at the FDA do in connection with</p> <p>15 public health issues, to be important to</p> <p>16 consider in forming your opinions regarding</p> <p>17 scientific theories?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 A. I think it's a piece of</p> <p>21 information to consider.</p> <p>22 BY MS. BROWN:</p> <p>23 Q. And as it relates to your</p> <p>24 opinion about dusting powders on surgical</p>	<p>1 to answer a question and pulled it today</p> <p>2 or -- or gave it today because they actually</p> <p>3 use very similar methods.</p> <p>4 Q. Do you consider the</p> <p>5 International Agency on the Research of</p> <p>6 Cancer to be a respected public health</p> <p>7 authority?</p> <p>8 A. I do.</p> <p>9 Q. Do you look to the research</p> <p>10 that the scientists at IARC do, when</p> <p>11 considering your own evaluation of scientific</p> <p>12 theories?</p> <p>13 A. I do.</p> <p>14 Q. Do you think that IARC is</p> <p>15 generally an impartial body that endeavors to</p> <p>16 do the best research it can on cancer?</p> <p>17 A. I do.</p> <p>18 Q. And have you considered IARC's</p> <p>19 conclusions as it relates to the opinions</p> <p>20 that you've provided in your report, your MDL</p> <p>21 report?</p> <p>22 A. Yes. I considered them amongst</p> <p>23 many things.</p> <p>24 Q. Sure. Is there anything</p>
Page 31	Page 33
<p>1 gloves, you have not had the opportunity to</p> <p>2 review the FDA's research on that score; is</p> <p>3 that fair?</p> <p>4 A. That's correct.</p> <p>5 Q. Another item, Doctor, that</p> <p>6 counsel for plaintiffs handed me before we</p> <p>7 began the deposition, I will mark as</p> <p>8 Exhibit 3, and it is the preamble to the IARC</p> <p>9 monograph -- IARC monographs from the</p> <p>10 evaluation of carcinogenic risk to humans.</p> <p>11 This is an amendment of January 2006.</p> <p>12 (Deposition Exhibit 3 marked</p> <p>13 for identification.)</p> <p>14 BY MS. BROWN:</p> <p>15 Q. I can hand you the copy we've</p> <p>16 marked. Let me know -- first of all, when</p> <p>17 did you review the preamble, Doctor?</p> <p>18 A. When I looked at the IARC</p> <p>19 monographs more than a year ago, I read the</p> <p>20 whole thing, but this preamble specifically I</p> <p>21 re-reviewed a few days ago when I pulled the</p> <p>22 UpToDate article about evidence-based</p> <p>23 medicine, to see how they review -- what</p> <p>24 methods they used to review a subject to try</p>	<p>1 different between the UpToDate source that</p> <p>2 you provided as Exhibit 2 and the preamble</p> <p>3 that you've directed us to on Exhibit 3?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 BY MS. BROWN:</p> <p>7 Q. That wasn't a great question.</p> <p>8 Do you find that Exhibit 2, the UpToDate</p> <p>9 summary of evidence-based medicine, is</p> <p>10 generally in concert with the preamble to the</p> <p>11 IARC monographs?</p> <p>12 A. I think in general, it is. I</p> <p>13 think that the UpToDate evidence-based</p> <p>14 medicine article is something that I as a MD,</p> <p>15 a clinician, a practicing doctor, this is how</p> <p>16 I think about questions. How IARC thinks</p> <p>17 about it may not be exactly the same, but the</p> <p>18 general principles are the same.</p> <p>19 Q. Is UpToDate a peer-reviewed</p> <p>20 publication, do you know, Doctor?</p> <p>21 A. It is a peer-reviewed</p> <p>22 publication. I would say it's -- it is.</p> <p>23 Q. And what knowledge do you have</p> <p>24 about the peer-reviewed process for the</p>

Page 34	Page 36
<p>1 UpToDate articles?</p> <p>2 A. I don't know their peer review</p> <p>3 process. I've never put any article into</p> <p>4 UpToDate. So I don't understand -- I don't</p> <p>5 know the details of it.</p> <p>6 Q. Okay. What basis do you have</p> <p>7 for saying that the UpToDate information</p> <p>8 you've provided as Exhibit 2 is peer</p> <p>9 reviewed?</p> <p>10 A. Well, it's my understanding</p> <p>11 that it is. Like any article that's</p> <p>12 published in the medical literature, there's</p> <p>13 usually some kind of reviewed process, where</p> <p>14 the editor receives it and asks a panel of</p> <p>15 experts to comment on it.</p> <p>16 Q. Okay. But this UpToDate</p> <p>17 information, that's not published in a</p> <p>18 medical journal, right?</p> <p>19 A. It's published online.</p> <p>20 Q. Right.</p> <p>21 A. As many medical literature now</p> <p>22 is published online, not in a hard journal.</p> <p>23 Q. Okay. But to be fair, you're</p> <p>24 not aware of whether or not the information</p>	<p>1 A. That's correct.</p> <p>2 Q. So as it relates to the</p> <p>3 opinions in your report, dated November 16,</p> <p>4 2018, the Saed manuscript that we've marked</p> <p>5 as Exhibit 4, did not inform those opinions;</p> <p>6 is that fair?</p> <p>7 A. That's correct.</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. I had an abstract that has some</p> <p>11 of this data that had been accepted to the</p> <p>12 SGO meeting for this year, but I did not have</p> <p>13 the entire report.</p> <p>14 BY MS. BROWN:</p> <p>15 Q. The next piece of information</p> <p>16 that counsel for plaintiffs provided, is a</p> <p>17 list of your invoices.</p> <p>18 (Deposition Exhibit 5 marked</p> <p>19 for identification.)</p> <p>20 BY MS. BROWN:</p> <p>21 Q. Did you type these invoices,</p> <p>22 Dr. Wolf?</p> <p>23 A. Yes.</p> <p>24 Q. Okay. And so it looks like</p>
Page 35	Page 37
<p>1 you've provided as Exhibit 2 has gone through</p> <p>2 the formal peer-reviewed process, as we know</p> <p>3 it, as it relates to medical journals?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form, misstates her testimony.</p> <p>6 A. I don't understand -- I don't</p> <p>7 know the details of their peer review</p> <p>8 process.</p> <p>9 BY MS. BROWN:</p> <p>10 Q. Fair enough. Counsel for the</p> <p>11 plaintiff also provided us with a manuscript,</p> <p>12 which we'll mark as Exhibit 4.</p> <p>13 (Deposition Exhibit 4 marked</p> <p>14 for identification.)</p> <p>15 BY MS. BROWN:</p> <p>16 Q. And this is a manuscript, one</p> <p>17 of the coauthors is Dr. Saed. Can you tell</p> <p>18 me, Doctor, when you reviewed the manuscript</p> <p>19 that we've marked as Exhibit 4?</p> <p>20 A. I received this manuscript and</p> <p>21 reviewed it on Friday, whatever date that</p> <p>22 was. I think the 4th of January.</p> <p>23 Q. And so this is something you</p> <p>24 have recently taken a look at; is that right?</p>	<p>1 there's actually a little different format</p> <p>2 between the first invoice, which appears to</p> <p>3 be January 2017, and later invoices; is that</p> <p>4 right?</p> <p>5 A. Can I see those, please?</p> <p>6 Q. Yeah, absolutely. I only have</p> <p>7 one copy, so we'll have to share.</p> <p>8 A. This is me. I typed this.</p> <p>9 Q. Okay.</p> <p>10 MS. O'DELL: We'll just say,</p> <p>11 for the record, the invoice in the</p> <p>12 form was done for purposes of my</p> <p>13 office paying it. So that's the</p> <p>14 format we use.</p> <p>15 But Dr. Wolf, you can explain</p> <p>16 how you conveyed your hours.</p> <p>17 A. Yes. I mean, this is how I</p> <p>18 sent them every time.</p> <p>19 BY MS. BROWN:</p> <p>20 Q. Okay.</p> <p>21 A. In an e-mail like this. I --</p> <p>22 this might be attached to my payment, but I</p> <p>23 hadn't really seen this form.</p> <p>24 Q. Okay. That's helpful. So a</p>

Judith K. Wolf, M.D.

Page 38	Page 40
<p>1 few follow-up questions, if I can grab that</p> <p>2 back from you. As I understand it, Dr. Wolf,</p> <p>3 the very first page of Exhibit 5, which is</p> <p>4 entitled "Judith Wolf, Medical Expert Hours,"</p> <p>5 January 2017, at \$600 an hour, that's a</p> <p>6 document you typed. Fair?</p> <p>7 A. That's correct.</p> <p>8 Q. Okay. And for each subsequent</p> <p>9 invoice, you typed a document similar to the</p> <p>10 first page of Exhibit 5. True?</p> <p>11 A. Yes.</p> <p>12 Q. Okay. And the remaining pages</p> <p>13 of Exhibit 5 have sort of a -- a different</p> <p>14 format. Would you agree?</p> <p>15 A. The hours look the same, but --</p> <p>16 I mean the format of the hours look the same,</p> <p>17 but the invoice at the top, no -- yes, that</p> <p>18 looks different.</p> <p>19 Q. Right. And I'm not trying to</p> <p>20 be tricky, but you didn't type everything</p> <p>21 after page 1 of Exhibit 5; is that fair?</p> <p>22 MS. O'DELL: What I'm</p> <p>23 conveying -- what I said.</p> <p>24 MS. BROWN: Let's get an answer</p>	<p>1 invoices that Dr. Wolf sent to Beasley</p> <p>2 Allen. For the record, what we have</p> <p>3 are four additional pages of</p> <p>4 Exhibit 5, which appear to be have</p> <p>5 been generated by Beasley Allen. So</p> <p>6 we'll request the underlying invoices</p> <p>7 that came from the doctor.</p> <p>8 MS. O'DELL: Fair enough.</p> <p>9 MS. BROWN: Thank you.</p> <p>10 MS. O'DELL: I would just note</p> <p>11 for the record, just so there's no</p> <p>12 suggestion otherwise, those are</p> <p>13 contemporaneously provided. There's</p> <p>14 no generation of that in conjunction</p> <p>15 with this deposition. So I'm happy to</p> <p>16 provide --</p> <p>17 MS. BROWN: And to be fair, I</p> <p>18 don't mean to suggest anything</p> <p>19 untoward.</p> <p>20 MS. O'DELL: I want the record</p> <p>21 to be clear.</p> <p>22 MS. BROWN: As do we.</p> <p>23 MS. O'DELL: So I will -- happy</p> <p>24 to ask my office for the other</p>
Page 39	Page 41
<p>1 and then I'm happy to have you make</p> <p>2 the statement for the record. I just</p> <p>3 want an answer to that question.</p> <p>4 MS. O'DELL: That's fair. You</p> <p>5 can answer the question.</p> <p>6 A. I didn't type the other ones.</p> <p>7 MS. O'DELL: So the invoice was</p> <p>8 prepared after the hours were</p> <p>9 submitted to my office for purposes of</p> <p>10 facilitating payment. So the data --</p> <p>11 to be clear, the data that was</p> <p>12 provided was from Dr. Wolf.</p> <p>13 MS. BROWN: Understood.</p> <p>14 BY MS. BROWN:</p> <p>15 Q. When you invoice the lawyers at</p> <p>16 Beasley Allen, do you send a document that</p> <p>17 looks like page 1 of Exhibit 5?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. And have you done that</p> <p>20 for every invoice that you've submitted</p> <p>21 through your work on this matter?</p> <p>22 A. Yes.</p> <p>23 MS. BROWN: Okay. So I'm going</p> <p>24 to request production of the original</p>	<p>1 documents.</p> <p>2 MS. BROWN: Terrific. And so</p> <p>3 we'll request the original invoices</p> <p>4 that came from Dr. Wolf.</p> <p>5 BY MS. BROWN:</p> <p>6 Q. A couple of questions,</p> <p>7 Doctor --</p> <p>8 MS. O'DELL: There weren't</p> <p>9 invoices. Fair enough. You've made</p> <p>10 your statement, but that's not what</p> <p>11 they were.</p> <p>12 MS. BROWN: We're on the same</p> <p>13 page.</p> <p>14 MS. O'DELL: Not maybe -- maybe</p> <p>15 we're not. But anyway, we will -- I</p> <p>16 will ask for whatever the list was</p> <p>17 that was originally received.</p> <p>18 BY MS. BROWN:</p> <p>19 Q. Now, Dr. Wolf, the first</p> <p>20 document we have in Exhibit 5, includes the</p> <p>21 hours that you billed to Beasley Allen for</p> <p>22 your work in January 2017. True?</p> <p>23 A. Yes.</p> <p>24 Q. And the very first entry that</p>

11 (Pages 38 to 41)

Page 42	Page 44
<p>1 you have here is for a one and a half hour 2 meeting with Margaret Thompson. True? 3 A. Yes. 4 Q. Who is Margaret Thompson? 5 A. Margaret Thompson is one of the 6 attorneys for Beasley Allen. 7 Q. Okay. And how is it -- and 8 Ms. Thompson's here today; is that right? 9 A. Yes. She's sitting right 10 there. 11 Q. And how is it that you came to 12 meet Ms. Thompson? 13 A. So one of my neighbors, her 14 name is Ali Gallagher, lives in the same 15 building as I do. She is an attorney and 16 also a nurse practitioner by training. And I 17 met her at a social setting in the lobby of 18 my building. We have happy hours on Fridays. 19 And we sort of became friendly and talked and 20 then we became friends after that. She knows 21 what I do for a living. I'm a gynecologic 22 oncologist and take care of women with 23 ovarian cancer. 24 And one day we were talking</p>	<p>1 know. I know that they both have lived in 2 Austin for a long time. 3 BY MS. BROWN: 4 Q. When did this conversation take 5 place? 6 A. I don't remember. Sometime 7 before January of 2017, but I don't remember 8 the date. And it had to happen after 2015, 9 because I didn't meet her until then, so 10 sometime in that two-year period. 11 Q. Okay. And what did she tell 12 you about the question of talc and ovarian 13 cancer? 14 A. She was -- 15 MS. O'DELL: Are you referring 16 to Ms. Gallagher? 17 MS. BROWN: Yeah. Thank you. 18 BY MS. BROWN: 19 Q. I want to talk a little bit 20 about the conversation with Ms. Gallagher. 21 A. Yeah. 22 Q. As I understand it, this was 23 the first conversation you had regarding this 24 potential expert witness work; is that right?</p>
Page 43	Page 45
<p>1 about work, because she has a medical 2 background and lots of people ask me about 3 work, even if they don't. And we came about 4 talk -- she may have asked me, do I know 5 anything about talc and ovarian cancer, and I 6 said I was aware of articles about the risk 7 of talcum powder and ovarian cancer, and she 8 mentioned that she had a friend, a colleague, 9 who was working on a case. And I said I 10 would be interested in becoming more 11 involved, in learning more about it, so she 12 introduced us. 13 Q. To your knowledge, is 14 Ms. Gallagher an attorney at Beasley Allen? 15 A. To my knowledge, she is not. 16 Q. To your knowledge, is she a 17 plaintiffs' attorney? 18 A. To my knowledge, I don't really 19 know what kind of law she practices. 20 Q. Okay. And what is your 21 understanding of how Ms. Gallagher knows 22 Ms. Thompson? 23 MS. O'DELL: If you know. 24 A. You know what? I don't really</p>	<p>1 A. Yes. 2 Q. Okay. 3 A. So the conversation -- again, 4 the conversation happened more than two years 5 ago. My recollection was she asked me did I 6 know anything about the risk of ovarian 7 cancer in talcum powder use, and then we 8 started talking about it and I told her I 9 knew a little, I was aware of some 10 epidemiologic data suggesting it. And she 11 said she was asking because she had -- she 12 knew that there was some litigation about it. 13 And I said, one of my concerns with ovarian 14 cancer is there's very little we can do to 15 cure women. They present late, there's no 16 screening tests, the symptoms are nonspecific 17 and that if there's something that we can do 18 to prevent it, it would be helpful. And the 19 conversation went on and she asked me would I 20 be interested in talking to the people she 21 knew who were involved in the case, and I 22 said yes. 23 Q. And in 2015, where were you 24 working, Dr. Wolf?</p>



Judith K. Wolf, M.D.

Page 46	Page 48
<p>1 A. In 2015, I was working for a 2 diagnostic company called Vermillion, and I 3 was doing some clinical medicine as locum 4 tenens covering practices here and there, 5 just so I could keep my clinical skills up. 6 Q. And where were you doing your 7 clinical medicine during your time at 8 Vermillion? 9 A. At -- in Atlanta and in 10 Indianapolis. 11 Q. What facility in Atlanta? 12 A. Northwest Memorial, I believe 13 is the name of the hospital. 14 Q. And what was the other location 15 where you performed -- 16 A. Community Health in 17 Indianapolis. 18 Q. And so were you a physician on 19 staff at both of those locations? 20 A. On staff at the hospital, yes. 21 Q. And Vermillion, of course, was 22 aware of your clinical practice as well? 23 A. Yes. 24 Q. Okay. And how many patients</p>	<p>1 patients I treated. I would say that, in 2 general, my practice in the last five years 3 has been about a third ovarian cancer and 4 about 50 percent endometrial cancer. 5 Prior to 2014, when I was 6 practicing full time GYN oncology, more than 7 50 percent of my practice was ovarian cancer 8 because patients came from around the country 9 to see me, specifically with that issue. 10 Q. And that was during the time 11 period you were practicing at MD Anderson? 12 A. In Houston at MD Anderson and 13 at Banner health -- Banner MD Anderson in 14 Arizona. 15 Q. And as I understand, you left 16 MD Anderson to go to Vermillion, correct? 17 A. I left MD Anderson in Houston 18 to go to MD Anderson in Arizona. I left 19 Arizona to go to Vermillion. 20 Q. Okay. And then from Vermillion 21 you went to another start-up? 22 A. Provista Diagnostics, yes. 23 Q. Did you continue to treat 24 patients while you were at Provista?</p>
Page 47	Page 49
<p>1 would you say you were treating at that time? 2 A. You know, I was only 3 intermittently treating, so I can't really 4 give you a number. I don't know. 5 Q. Did you have set office hours 6 or hospital hours during that time period? 7 A. In Atlanta, I covered probably 8 three or four weeks a year when the doctors 9 were on vacation. In Indianapolis, when I 10 started, that's what I was doing. There was 11 one doctor and when he was gone, there was no 12 one to cover. 13 Q. Fair to say clinical medicine 14 was a small part of your practice during the 15 time period you were at Vermillion? 16 A. Yes. 17 Q. Did you treat any ovarian 18 cancer patients during the time period you 19 worked for Vermillion? 20 A. Yes. 21 Q. About how many patients would 22 you estimate you treated during that time 23 period? 24 A. I don't remember how many</p>	<p>1 A. I did. 2 Q. At the same two locations? 3 A. I don't believe I covered any 4 more in Atlanta, because the need was greater 5 in Indianapolis and, in fact, the last year 6 that I was working at Provista, I was 7 covering one week a month in Indiana. 8 Q. In what states are you licensed 9 to practice medicine? 10 A. My active licenses are in 11 Indiana, Georgia and Arizona. 12 Q. And you no longer have an 13 active license in Texas; is that right? 14 A. That's correct. 15 Q. Any other states that are no 16 longer active for you? 17 A. Minnesota. 18 Q. And then as I understand it, 19 you left Provista in about January of 2017? 20 A. No, I left Provista just -- my 21 official last day was October 1st of 2018. 22 Q. And so during part of the time 23 when you began your expert work for the 24 plaintiffs' lawyers in the talc litigation,</p>

13 (Pages 46 to 49)

Judith K. Wolf, M.D.

Page 50	Page 52
<p>1 you were working at Provista; is that right?</p> <p>2 A. That's correct.</p> <p>3 Q. Okay. Did you do any of</p> <p>4 work -- any expert work for plaintiffs'</p> <p>5 lawyers in the talc litigation while you were</p> <p>6 working at Vermillion?</p> <p>7 A. Let me think about that. Yes,</p> <p>8 I believe I did.</p> <p>9 Q. Did you disclose to Vermillion</p> <p>10 your work for plaintiffs' lawyers in the talc</p> <p>11 litigation?</p> <p>12 MS. O'DELL: If you did -- if</p> <p>13 you did any work during that time</p> <p>14 period.</p> <p>15 A. Yeah, I don't recall. I don't</p> <p>16 recall.</p> <p>17 BY MS. BROWN:</p> <p>18 Q. Do you recall if Vermillion had</p> <p>19 a policy about its officials doing expert</p> <p>20 witness work?</p> <p>21 A. My recollection was that they</p> <p>22 did not have a policy.</p> <p>23 Q. And what were the circumstances</p> <p>24 that led to you leaving Provista in October</p>	<p>1 of your time would you say is devoted to</p> <p>2 treating patients at the Community Health</p> <p>3 Network?</p> <p>4 A. 60.</p> <p>5 MS. O'DELL: Just for</p> <p>6 clarification, are you asking for her</p> <p>7 time she's working at Community Health</p> <p>8 in Indianapolis, what percentage of</p> <p>9 her time is devoted to treating</p> <p>10 patients, or are you asking overall?</p> <p>11 It was just confusing.</p> <p>12 MS. BROWN: So the question --</p> <p>13 I'm looking at the real time. The</p> <p>14 question said, "devoted to treating</p> <p>15 patients at Community Health Network."</p> <p>16 MS. O'DELL: Okay. Thank you.</p> <p>17 BY MS. BROWN:</p> <p>18 Q. Doctor, the final document that</p> <p>19 the lawyer for the plaintiffs, Ms. O'Dell</p> <p>20 gave me this morning, is -- we will mark as</p> <p>21 Exhibit 6, which appears to be an updated CV</p> <p>22 for you, dated January 4th, 2017.</p> <p>23 (Deposition Exhibit 6 marked</p> <p>24 for identification.)</p>
Page 51	Page 53
<p>1 of 2018?</p> <p>2 A. Provista? I could see that the</p> <p>3 company was having trouble getting funding,</p> <p>4 and, in fact, on October 1st, 2018, the</p> <p>5 company shut down. And so I had already been</p> <p>6 looking and I knew that Indiana wanted me to</p> <p>7 come there, so...</p> <p>8 Q. So when you say "the company</p> <p>9 shut down," what do you mean by that?</p> <p>10 A. They dissolved.</p> <p>11 Q. Was there any investigation</p> <p>12 into the company that led to the dissolution?</p> <p>13 A. No, it was just -- ran out of</p> <p>14 money, couldn't find new investors.</p> <p>15 Q. And since October of 2018,</p> <p>16 you've been working at the Indiana --</p> <p>17 Indianapolis location?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. What's the name of that?</p> <p>20 A. Community Health Network.</p> <p>21 Q. And you're a physician there</p> <p>22 part-time; is that right?</p> <p>23 A. That's correct.</p> <p>24 Q. And how many -- what percentage</p>	<p>1 BY MS. BROWN:</p> <p>2 Q. Do you have a copy in front of</p> <p>3 you?</p> <p>4 A. Yes, I do.</p> <p>5 Q. So the copy that was attached</p> <p>6 to your report, I believe was dated 2016.</p> <p>7 A. Yes.</p> <p>8 Q. Now, why would that be?</p> <p>9 A. Because from the time I started</p> <p>10 working with a company actually, I haven't</p> <p>11 had an assistant to help me update it and I'm</p> <p>12 not -- I haven't been good at keeping it</p> <p>13 updated.</p> <p>14 Q. Well, here's what I'm trying to</p> <p>15 understand. We got Exhibit 6, which is dated</p> <p>16 January of 2017, correct?</p> <p>17 A. Oh, it should be 2018. That's</p> <p>18 my -- see, I'm not a good typist.</p> <p>19 Q. Okay. So the correct date of</p> <p>20 Exhibit 6 is really January 4th, 2018?</p> <p>21 A. That's correct.</p> <p>22 MS. O'DELL: Should it be 2019?</p> <p>23 A. '19. '19.</p> <p>24</p>

14 (Pages 50 to 53)



Page 54	Page 56
<p>1 BY MS. BROWN:</p> <p>2 Q. Okay. I think we're all on the</p> <p>3 same page now. All right. And you've</p> <p>4 updated this with additional employment that</p> <p>5 you've had --</p> <p>6 A. Yes.</p> <p>7 Q. -- since the time of your</p> <p>8 last --</p> <p>9 A. And a few publications that</p> <p>10 weren't on there.</p> <p>11 Q. Have you ever -- just to speak</p> <p>12 generally about your resumé, Doctor, have you</p> <p>13 ever published any peer-reviewed article</p> <p>14 regarding talcum powder and ovarian cancer?</p> <p>15 A. No.</p> <p>16 Q. Have you ever given any</p> <p>17 presentation regarding talcum powder and</p> <p>18 ovarian cancer?</p> <p>19 A. No.</p> <p>20 Q. Have you ever been invited to</p> <p>21 speak at any conference that dealt with</p> <p>22 issues regarding talcum powder and ovarian</p> <p>23 cancer?</p> <p>24 A. No.</p>	<p>1 A. In the popular press, I have</p> <p>2 talked about the use of birth control pills</p> <p>3 to reduce the risk of ovarian cancer, I've</p> <p>4 talked about the symptoms of ovarian cancer,</p> <p>5 I've talked about some of my research and</p> <p>6 treatment of ovarian cancer. I don't recall</p> <p>7 that I specifically talked about the risk of</p> <p>8 ovarian cancer.</p> <p>9 Q. Do you recall -- have you ever</p> <p>10 spoken -- have you ever gone on any -- strike</p> <p>11 that.</p> <p>12 Have you ever done any news</p> <p>13 interviews in which you have indicated your</p> <p>14 opinion in this case, which is that you</p> <p>15 believe that talc -- talcum powder causes</p> <p>16 ovarian cancer?</p> <p>17 A. I have not. But until I</p> <p>18 started reviewing all the literature for this</p> <p>19 case, I was generally aware of some</p> <p>20 epidemiologic studies, but I wasn't as</p> <p>21 convinced after reviewing the entire body of</p> <p>22 literature that I was able to review, that</p> <p>23 talcum powder causes ovarian cancer in some</p> <p>24 women and puts all women who use it at risk</p>
Page 55	Page 57
<p>1 Q. I've seen over the years,</p> <p>2 Doctor, you've done some popular press and</p> <p>3 news segments; is that right?</p> <p>4 A. Yes.</p> <p>5 Q. Have you ever given any news</p> <p>6 interviews regarding talcum powder and</p> <p>7 ovarian cancer?</p> <p>8 A. No.</p> <p>9 Q. You have, however, been an</p> <p>10 advocate for women's health issues over the</p> <p>11 years, correct?</p> <p>12 A. Yes.</p> <p>13 MS. O'DELL: Object to the</p> <p>14 form.</p> <p>15 BY MS. BROWN:</p> <p>16 Q. And you've given a number of</p> <p>17 issues -- a number of interviews regarding</p> <p>18 ovarian cancer; is that fair?</p> <p>19 A. Yes.</p> <p>20 Q. Including the causes of ovarian</p> <p>21 cancer. True?</p> <p>22 A. In the popular -- are you</p> <p>23 asking me about in the popular press?</p> <p>24 Q. Uh-huh.</p>	<p>1 for ovarian cancer.</p> <p>2 Q. Prior to being hired as an</p> <p>3 expert witness for plaintiff lawyers in the</p> <p>4 talcum powder litigation, you, Dr. Wolf, were</p> <p>5 not as convinced that talcum powder causes</p> <p>6 ovarian cancer. True?</p> <p>7 MS. O'DELL: Object to the</p> <p>8 form, misstates her testimony.</p> <p>9 A. Prior to being hired, I hadn't</p> <p>10 reviewed all the literature to be able to</p> <p>11 formulate my opinion.</p> <p>12 BY MS. BROWN:</p> <p>13 Q. Prior to being hired by</p> <p>14 plaintiffs' lawyers in the talcum powder</p> <p>15 litigation, you did not hold the opinion that</p> <p>16 talcum powder causes ovarian cancer, correct?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form.</p> <p>19 A. Prior to reviewing all the</p> <p>20 literature for this case, I wasn't aware of</p> <p>21 all the literature. I would say that I was</p> <p>22 aware that there was some indication that</p> <p>23 talcum powder increased the risk of ovarian</p> <p>24 cancer. What I was always told when I</p>

<p style="text-align: right;">Page 58</p> <p>1 brought that up was that, not to worry, 2 talcum powder doesn't contain asbestos 3 anymore and so that data is old and it 4 doesn't matter. 5 After reviewing all the 6 literature and the information that I have 7 seen, I don't believe that's true anymore. 8 BY MS. BROWN: 9 Q. You have formed the opinion 10 that talcum powder causes ovarian cancer 11 since being hired by the plaintiffs' lawyers 12 in the talcum powder litigation, correct? 13 MS. O'DELL: Object to the 14 form. 15 A. I want to think about how I 16 want to answer that, because the question is 17 a little confusing to me because I believe 18 what I said was, until I was aware of all of 19 the literature and looked at it as a whole, 20 all of the evidence, I hadn't formed the 21 opinion that talcum powder causes ovarian 22 cancer. I knew there was data that suggests 23 that talcum powder product increases the risk 24 of ovarian cancer and once I had all the</p>	<p style="text-align: right;">Page 60</p> <p>1 A. Twenty-four years. 2 Q. And for the 24 years that you 3 practiced as a gynecologic oncologist prior 4 to being hired by the plaintiffs' lawyers, it 5 was not your regular practice to ask your 6 patients if they used talcum powder. True? 7 MS. O'DELL: Object to the 8 form. 9 A. Prior to reviewing all the 10 literature and becoming convinced that it was 11 a concern, it was not my regular practice. 12 BY MS. BROWN: 13 Q. And you keep answering the 14 question by saying "prior to reviewing all 15 the literature." You reviewed all of the 16 literature at the request of the plaintiffs' 17 lawyers, correct? 18 MS. O'DELL: Object to the 19 form, asked and answered. 20 A. I reviewed all the literature 21 when I got -- when I wanted to learn more 22 about it, to become involved with deciding on 23 my own, whether this was something that I 24 should be concerned about. And if I reviewed</p>
<p style="text-align: right;">Page 59</p> <p>1 information, I fully believe it. And now I 2 tell all my patients, whether they have 3 ovarian cancer or not, not to use it or to 4 stop using it if they are. I tell all my 5 friends and family the same thing. 6 BY MS. BROWN: 7 Q. Prior to reviewing all of the 8 literature regarding talcum powder and 9 ovarian cancer, it was not your practice, as 10 a gynecologic oncologist, to tell your 11 patients not to use talcum powder. True? 12 A. Prior to reviewing all the 13 literature, it was not my practice to tell 14 patients, but I believe that I was naive, and 15 that when I take care of patients that come 16 to me that have cancer or they think they 17 have cancer, this was not something that I 18 focused on because I wasn't spending my time 19 reviewing all the literature. 20 Q. You practiced, Doctor, as a 21 gynecologic oncologist in a number of 22 different institutions for nearly 30 years 23 before being hired by plaintiffs' lawyers; is 24 that true?</p>	<p style="text-align: right;">Page 61</p> <p>1 the literature and felt there was no concern, 2 I would have a different opinion. 3 BY MS. BROWN: 4 Q. You reviewed all of the 5 literature regarding talcum powder and 6 ovarian cancer at the request of the 7 plaintiffs' lawyers, correct? 8 A. You're asking me at the 9 "request," and I -- that's the word that I'm 10 not -- I don't recall that being asked, but 11 the question at hand was, does talcum powder 12 cause ovarian cancer? 13 Q. I think I understand the 14 disconnect. You reviewed all of the 15 literature regarding talcum powder and 16 ovarian cancer in connection with your work 17 to answer a question that the plaintiffs' 18 lawyers asked you; is that fair? 19 A. In connection with this work, I 20 reviewed all of the literature. 21 Q. Okay. So if we wanted to date 22 the time at which you formed the opinion that 23 talcum powder causes ovarian cancer, it would 24 be after the time that you were hired by the</p>

Judith K. Wolf, M.D.

Page 62	Page 64
<p>1 plaintiffs' lawyers, correct?</p> <p>2 A. I would say the date that I was</p> <p>3 convinced that talcum powder products cause</p> <p>4 ovarian cancer was after I reviewed all the</p> <p>5 literature. Prior to that, I knew that there</p> <p>6 was some papers that suggested there was a</p> <p>7 risk, but I didn't review all the literature</p> <p>8 to formulate an opinion about it.</p> <p>9 Q. And the reason that you</p> <p>10 formulated an opinion by reviewing all of the</p> <p>11 literature, was because you had been hired as</p> <p>12 an expert witness by plaintiffs' lawyers.</p> <p>13 True?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. I'm confused with the question.</p> <p>17 Because --</p> <p>18 BY MS. BROWN:</p> <p>19 Q. Well, let me see if I can</p> <p>20 orient you, Dr. Wolf. Here's what we're</p> <p>21 trying to understand. I understand your</p> <p>22 testimony was that for about 24 years as a</p> <p>23 practicing gynecologic oncologist, the</p> <p>24 potential association between talcum powder</p>	<p>1 health publications and went on TV shows,</p> <p>2 like Dr. Oz. True?</p> <p>3 A. Yes.</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 BY MS. BROWN:</p> <p>7 Q. And during those 24 years, you</p> <p>8 did not publish, write or speak about the</p> <p>9 opinion that talcum powder causes ovarian</p> <p>10 cancer, correct?</p> <p>11 A. What I published was my</p> <p>12 research, which was not on talcum powder</p> <p>13 products and ovarian cancer. What I spoke</p> <p>14 about was what I was asked to speak about,</p> <p>15 which was not talcum powder and ovarian</p> <p>16 cancer. When I was on the public -- when I</p> <p>17 was on the television or in the news, there</p> <p>18 was specific questions that I was being asked</p> <p>19 to speak about. They were not talcum powder</p> <p>20 and ovarian cancer.</p> <p>21 Q. But to be fair, some of the</p> <p>22 questions you were asked about is, what</p> <p>23 increases a woman's risk for ovarian cancer,</p> <p>24 right?</p>
Page 63	Page 65
<p>1 and ovarian cancer was not something you</p> <p>2 were, quote, focused on; is that right?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 A. It's not something that I was</p> <p>6 researching.</p> <p>7 BY MS. BROWN:</p> <p>8 Q. Okay. Nonetheless, you worked</p> <p>9 as an advocate for women's health during</p> <p>10 those 24 years. True?</p> <p>11 A. Most of those years.</p> <p>12 Q. You published a number of</p> <p>13 papers in the area of women's health,</p> <p>14 correct?</p> <p>15 A. Yes.</p> <p>16 Q. You were invited to a number of</p> <p>17 conferences and seminars and symposia on</p> <p>18 issues regarding ovarian cancer and women's</p> <p>19 health. True?</p> <p>20 A. Yes.</p> <p>21 Q. You published chapters in</p> <p>22 textbooks regarding ovarian cancer. True?</p> <p>23 A. Yes.</p> <p>24 Q. You gave interviews to women's</p>	<p>1 MS. O'DELL: Object to the</p> <p>2 form.</p> <p>3 A. I don't remember the questions</p> <p>4 that I was asked about on Dr. Oz. I know</p> <p>5 that the purpose for me to go on that was to</p> <p>6 talk about the reduction in the risk of</p> <p>7 ovarian cancer by using birth control pills</p> <p>8 and I don't remember all of the questions.</p> <p>9 As far as I can recall, the other times I was</p> <p>10 on the news, that was not a question that was</p> <p>11 raised.</p> <p>12 BY MS. BROWN:</p> <p>13 Q. When is the first date you can</p> <p>14 recall forming the opinion that you've</p> <p>15 provided in your expert report in the MDL?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form. Are you moving off going</p> <p>18 through the -- sort of the notice and</p> <p>19 the documents requested? I'm not --</p> <p>20 MS. BROWN: Shortly. You</p> <p>21 almost ready for a break?</p> <p>22 MS. O'DELL: Well, probably in</p> <p>23 the next five minutes or so, but what</p> <p>24 I was going to say and I neglected to</p>

17 (Pages 62 to 65)

<p style="text-align: right;">Page 66</p> <p>1 say earlier is, there were certain  2 documents that were requested through  3 the notice. And just for the record,  4 I wanted to state that plaintiffs  5 served objections to certain of those  6 requests and we produced documents  7 here consistent with those objections.  8 MS. BROWN: Right. We're in  9 receipt of your objections.  10 BY MS. BROWN:  11 Q. So Doctor, what -- let's mark  12 your report as Exhibit 7.  13 (Deposition Exhibit 7 marked  14 for identification.)  15 BY MS. BROWN:  16 Q. And my question for you is  17 that -- when's the first date by which you  18 formed the opinions that are contained in  19 this report that we've marked as Exhibit 7?  20 MS. O'DELL: Object to the  21 form.  22 A. I cannot recall the first date.  23 BY MS. BROWN:  24 Q. Okay. At the time that you</p>	<p style="text-align: right;">Page 68</p> <p>1 Is there anything else that  2 you've brought with you today in response to  3 our requests contained in Exhibit 1?  4 MS. O'DELL: Other than the  5 notebooks she's brought for her  6 reference materials?  7 A. No, I haven't -- I brought  8 this -- it has my report and my reference  9 list and my CV. These are all my references  10 and all of that is contributing material.  11 BY MS. BROWN:  12 Q. Okay. So for the record, let's  13 identify what you've just pointed out to us.  14 You have a small binder in front of you --  15 A. Yeah.  16 Q. -- which appears to be tabbed.  17 Did you do that tabbing?  18 A. I did. And it just sort of  19 says which section is which in my report.  20 Q. Do you have any notes in your  21 report, other than the tabs?  22 A. No.  23 Q. Okay. And what else is  24 contained in that binder?</p>
<p style="text-align: right;">Page 67</p> <p>1 were approached by Ms. Gallagher in 2005, you  2 did not hold the opinion that talcum powder  3 causes ovarian cancer, correct?  4 MS. O'DELL: Object to the  5 form.  6 A. I didn't meet Ms. Gallagher  7 till 2015.  8 BY MS. BROWN:  9 Q. Correct. I misspoke. I'm  10 sorry.  11 A. And the question was, I did not  12 hold the opinion that -- I had concerns about  13 talcum powder uses in ovarian cancer and I  14 had enough concerns that I was interested  15 enough to become involved in learning more  16 about it.  17 Q. To close the loop, then,  18 Doctor, on the requests we made in the  19 deposition notice that we've marked as  20 Exhibit 1, we've marked a number of documents  21 that lawyers for the plaintiffs produced  22 early this morning. We're aware of the  23 objections that lawyers for the plaintiffs  24 have made.</p>	<p style="text-align: right;">Page 69</p> <p>1 A. My CV and then this is a list  2 of all of the contributing material.  3 Q. And then you have next to you  4 three larger binders, which I think you said  5 contain the references in the report; is that  6 right?  7 A. The references and also the  8 other articles that you were provided, the  9 new are in these and then that's all the  10 contributing material.  11 Q. Okay. And so for the record,  12 behind you there's probably another ten or 12  13 binders that you're suggesting contain the  14 documents contained in -- listed in Exhibit B  15 to your report?  16 A. That's correct.  17 Q. Okay. You didn't type Exhibit  18 B to your report, did you, Doctor?  19 A. I did not type it.  20 Q. Do you know where Exhibit B to  21 your report came from?  22 A. The attorneys typed it up for  23 me from all of my reference -- contributing  24 material.</p>

Page 70	Page 72
<p>1 Q. Okay. Did the attorneys 2 provide you with all of the materials that 3 are listed on Exhibit B? 4 A. No. 5 Q. Which of the materials on 6 Exhibit B were provided by the attorneys? 7 A. I can't tell you. It's a mix 8 of what I provided them, what they provided 9 me, what I asked them to provide to me. 10 Q. Well, let's start by 11 understanding the difference between your 12 reference list on page 18 of your report and 13 then Exhibit B to your report. Can you 14 explain to me the difference there? 15 A. The reference lists are 16 articles that I actually reference in my 17 report. And this is all the articles that 18 I -- or pieces of information that I 19 considered when drafting my report. 20 Q. Did you consider every piece of 21 information that's listed on the 28-page 22 Exhibit B? 23 A. Yes. 24 Q. Did you read every entry on the</p>	<p>1 A. No. 2 Q. Did you take any notes when you 3 were reviewing any of the materials cited in 4 your report? 5 A. I didn't take separate notes. 6 What I did was, I started writing things down 7 and used that as the draft of my report and 8 then just updated it every time I read more, 9 changed more, added, subtracted to it. 10 Q. Take a look, if you would, at 11 page 13 of Exhibit B. There are a number of 12 entries that begin with the letters J&amp;J. Do 13 you see that? 14 A. I do. 15 Q. What are those? 16 A. Those are internal documents 17 from J&amp;J that were provided to me from the 18 plaintiffs' attorneys. 19 Q. And did you request internal 20 documents be provided to you from the 21 plaintiffs' lawyers? 22 A. Some of them I might have 23 requested and some of them were provided to 24 me. But I can't tell you which is which by</p>
Page 71	Page 73
<p>1 28-page Exhibit B? 2 A. I did not read every word of 3 every entry. Some of them I looked at a 4 piece of it, if it was a reference from 5 something else that I wanted to confirm. 6 Some of it I looked at and set aside, didn't 7 feel like it was added -- additive or 8 pertinent to what I was reviewing. And -- 9 but these are all of the things that I looked 10 at in some way. 11 Q. How did you maintain all of the 12 documents contained at Exhibit B? And by 13 that I mean, do you have all of these 14 documents electronically or do you have a 15 hard copy at your house or office? 16 A. Both. 17 Q. Okay. You have a -- hard 18 copies of every document contained on Exhibit 19 B? 20 A. Yes. 21 Q. Okay. So you have 12 binders 22 in hard copy? 23 A. Yes. 24 Q. Do they have notes on them?</p>	<p>1 looking at that list. 2 Q. In the normal course of your 3 practice as a gynecologic oncologist, do you 4 review internal company documents in making 5 medical decisions? 6 A. I don't have access to them. 7 MS. O'DELL: Object to the 8 form. 9 BY MS. BROWN: 10 Q. So as part of your work as a 11 treating physician, you don't rely on 12 internal company documents. Fair? 13 MS. O'DELL: Object to the 14 form. 15 A. I don't have access to internal 16 company documents. 17 BY MS. BROWN: 18 Q. So you don't rely on them, 19 right? 20 MS. O'DELL: Object to the 21 form. 22 A. Well, I don't have access to 23 them. 24</p>



<p style="text-align: right;">Page 74</p> <p>1 BY MS. BROWN:  2 Q. Do you have any -- so that  3 means you haven't used them in your practice  4 as a gynecologic oncologist, right?  5 MS. O'DELL: Object to the  6 form.  7 A. Not that I recall.  8 BY MS. BROWN:  9 Q. And the 20-some-odd J&amp;J  10 documents you have listed here at Exhibit 13,  11 do you have any idea what percentage of the  12 entire document production from J&amp;J these 20  13 documents comprise?  14 A. Of all of J&amp;J's internal  15 documents? I don't.  16 Q. Was it important to you, to  17 consider the context of all of the internal  18 documents you have cited at Exhibit 13?  19 MS. O'DELL: Object to the  20 form.  21 A. Say that again.  22 BY MS. BROWN:  23 Q. Was it important to you --  24 first of all, did you request that the</p>	<p style="text-align: right;">Page 76</p> <p>1 Q. I want to know -- sitting here  2 today, it's my opportunity to understand what  3 forms the basis of your opinions and I want  4 know if there's information in an internal  5 Johnson &amp; Johnson document that forms the  6 basis of your opinion that talc causes  7 ovarian cancer.  8 MS. O'DELL: Objection, asked  9 and answered.  10 A. My opinion is not based on any  11 one single document or any one single source  12 of documents. It's the whole of the  13 documents that I reviewed.  14 BY MS. BROWN:  15 Q. So what information do you rely  16 on from the whole of the 20 J&amp;J documents you  17 looked at?  18 MS. O'DELL: Objection,  19 mischaracterizes the witness's  20 testimony.  21 A. So I'm going to say that this  22 is my contributing materials list. It's not  23 even -- none of the -- those internal  24 documents are referenced in my -- in my</p>
<p style="text-align: right;">Page 75</p> <p>1 lawyers give you some of these internal  2 documents?  3 A. I don't recall specifically if  4 I requested these or they gave them to me. I  5 just don't recall.  6 Q. Do internal J&amp;J documents form  7 the basis of your opinions in this  8 litigation?  9 MS. O'DELL: Object to the  10 form.  11 A. The basis of my opinion is the  12 review of everything that I looked at in  13 total, not -- there isn't any one thing that  14 forms the basis of my opinion. It's the  15 whole of the evidence.  16 BY MS. BROWN:  17 Q. Okay. So identify for me what  18 information in the internal Johnson &amp; Johnson  19 documents you're relying on to form your  20 opinion.  21 A. Well, these are in my  22 contributing data lists, not in my reference  23 lists. So I'd have to look at all of them  24 to --</p>	<p style="text-align: right;">Page 77</p> <p>1 opinion. So I don't know how else to answer  2 to you, other than to say I looked at all of  3 the evidence. The things that I felt were  4 important, I referenced in my opinion. I  5 don't recall what's in all of those.  6 BY MS. BROWN:  7 Q. So there are internal company  8 documents listed on page 13 of Exhibit B, the  9 contents of which, sitting here today, you're  10 unaware of; is that fair?  11 MS. O'DELL: Object. That  12 misstates her testimony.  13 A. What I --  14 MS. O'DELL: Excuse me. Object  15 to the form of the question.  16 You may answer.  17 A. What I said is, I can't recall  18 what those individually are, sitting here  19 today. I could look at them if you'd like me  20 to.  21 BY MS. BROWN:  22 Q. Well, I want you to do that if  23 it forms the basis of your opinion. If it  24 doesn't and it's just something that was</p>

<p style="text-align: right;">Page 78</p> <p>1 given to you by the plaintiffs' lawyers, we  2 can move on. But if there's something in the  3 20 documents that the plaintiffs' lawyers  4 have listed on page 13 of Exhibit B to your  5 report that forms the basis of your opinion,  6 I want to know what that is.  7 MS. O'DELL: Objection to the  8 form, asked and answered three times  9 now.  10 A. The basis of my opinion is not  11 formed by any one document.  12 BY MS. BROWN:  13 Q. Is the basis of your opinion  14 formed, in part, by internal Johnson  15 &amp; Johnson documents?  16 MS. O'DELL: Object to the  17 form.  18 A. I would have to look at all of  19 those documents again to tell you if there  20 was something specifically in there and what  21 the -- I just -- they're numbers to me.  22 Looking at them here, I don't recall that --  23 what's in each one of those to tell you if  24 there's something specifically that formed my</p>	<p style="text-align: right;">Page 80</p> <p>1 form. I think Dr. Wolf stated  2 previously they were provided to her  3 because they weren't available  4 elsewhere.  5 MS. BROWN: Well, I need her to  6 say that, though. I need that  7 testimony from her.  8 BY MS. BROWN:  9 Q. Dr. Wolf, did you -- were the  10 J&amp;J documents on page 13 provided to you by  11 plaintiffs' lawyers?  12 MS. O'DELL: Object to the  13 form.  14 A. The documents were provided to  15 me by plaintiffs' lawyers.  16 BY MS. BROWN:  17 Q. And are you -- can you provide  18 us with an understanding of the methodology  19 the plaintiffs' lawyers employed in terms of  20 which documents to select for your review?  21 MS. O'DELL: Object to the  22 form, asked and answered.  23 A. I'm not sure what you're  24 asking.</p>
<p style="text-align: right;">Page 79</p> <p>1 opinion.  2 MS. O'DELL: And you're  3 referring to page 13.  4 THE WITNESS: Of Exhibit B.  5 MS. O'DELL: Of Exhibit B.  6 We've been going about an hour and ten  7 minutes.  8 BY MS. BROWN:  9 Q. Sure. I'll just finish real  10 quick on the company documents. If you just  11 look at page 12 of your report, you list a  12 number -- sorry, Exhibit B to your report,  13 you list a number of Imerys entries. Do you  14 see that there?  15 A. I do.  16 Q. Who is Imerys?  17 A. Imerys is a mining company.  18 Q. Did you select these internal  19 Imerys documents to review?  20 A. These were provided to me.  21 Q. And same with the J&amp;J document,  22 did you select those to review or were they  23 provided to you?  24 MS. O'DELL: Objection to the</p>	<p style="text-align: right;">Page 81</p> <p>1 BY MS. BROWN:  2 Q. Do you have an understanding of  3 how the plaintiffs' lawyers went about  4 picking the 20 J&amp;J documents and the 15  5 Imerys documents that appear on Exhibit B to  6 your report?  7 MS. O'DELL: Object to the  8 form.  9 A. I didn't specifically ask them  10 how they came about finding them, looking for  11 them, if that's what you're asking me.  12 BY MS. BROWN:  13 Q. Do you have any understanding,  14 sitting here today, of how the internal  15 documents listed on page B of your report,  16 were compiled for your review?  17 MS. O'DELL: Object to the  18 form, asked and answered.  19 A. I'm not aware of how the  20 plaintiffs' attorneys compiled the report. I  21 didn't ask them their methodology.  22 BY MS. BROWN:  23 Q. Having reviewed the internal  24 documents that the plaintiffs' lawyers gave</p>



Judith K. Wolf, M.D.

Page 82	Page 84
<p>1 you, did you ask them for additional internal 2 documents? 3 A. I don't recall. 4 Q. Did you ask the plaintiffs' 5 lawyers any questions about any of the 6 internal documents they provided you? 7 MS. O'DELL: Excuse me, I'm 8 going to object to that question. 9 MS. BROWN: I'll rephrase. 10 MS. O'DELL: You're not 11 entitled to understand -- 12 MS. BROWN: I'll rephrase -- 13 (Simultaneous discussion 14 interrupted by reporter.) 15 MS. O'DELL: Let me finish my 16 objection before you interrupt me. 17 MS. BROWN: Sure. 18 MS. O'DELL: So she's not 19 entitled to ask you questions about 20 your conversations with counsel. 21 MS. BROWN: That's not entirely 22 true. 23 BY MS. BROWN: 24 Q. I'm certainly entitled to know</p>	<p>1 MS. O'DELL: Fair enough. 2 MS. BROWN: If she asked you, 3 as lawyers for the plaintiffs, for any 4 information on which she is relying 5 for her opinion, then that's 6 discoverable. And so my question -- I 7 appreciate your work-product concern. 8 My question is meant to stay within 9 the bounds of the Federal Rules, which 10 is that -- was there any information 11 that you provided her about these 12 documents on which she is relying to 13 form her opinion. That's 14 discoverable. 15 MS. O'DELL: That's not the 16 question you asked her. 17 MS. BROWN: Yes, absolutely. 18 MS. O'DELL: You asked if she 19 asked any questions, which goes to 20 communication. And what the rule 21 allows discovery on are the materials 22 provided to Dr. Wolf, which are 23 available here for your review. 24 They're available from the list that</p>
Page 83	Page 85
<p>1 about information that counsel provided to 2 you that you're relying on to form your 3 opinions. So I will rephrase the question to 4 ask just for whether you asked for any -- you 5 have any questions about these internal 6 documents that you asked of plaintiffs that 7 you are relying on for your opinions here? 8 MS. O'DELL: Dr. Wolf, I'm 9 going to instruct you not to discuss 10 conversations you had with counsel. 11 You're certainly entitled, 12 under the rules, to know what 13 materials were provided for Dr. Wolf, 14 which we are doing that, but you're 15 not entitled to understand any 16 conversations that occurred between 17 Dr. Wolf and counsel. I'm going to 18 instruct the witness not to answer. 19 MS. BROWN: But that's not the 20 law. So the law is -- 21 MS. O'DELL: The law is -- 22 MS. BROWN: Let me finish. I 23 let you put your statement on the 24 record. Let me just finish.</p>	<p>1 you've been provided. You're not 2 entitled to any discussions, and that 3 was what the question focused on. So 4 why don't we -- 5 MS. BROWN: We are entitled -- 6 I just want to finish this question 7 and we'll absolutely take a break. We 8 are entitled to any information, 9 verbal or otherwise that you may have 10 given her, if she's relying on it. 11 And so I will rephrase the question to 12 make clear, that all I want to know is 13 if she asked the lawyers a question 14 about the documents, the answer to 15 which she relies on for her opinion. 16 That is 100 percent discoverable. 17 MS. O'DELL: It is not. That's 18 a communication between counsel and 19 she's not going to testify. Now, all 20 the materials that she's relying on 21 are present in the -- excuse me. 22 They're present before Dr. Wolf and on 23 the table beside Dr. Wolf. Those are 24 the materials she's relying on and</p>

22 (Pages 82 to 85)

<p style="text-align: right;">Page 86</p> <p>1 you're welcome to ask all of the</p> <p>2 questions you'd like. But in terms of</p> <p>3 communications between counsel and</p> <p>4 Dr. Wolf, you're not entitled to</p> <p>5 discover that and I'm going to</p> <p>6 instruct the witness not to answer.</p> <p>7 MS. BROWN: Here's what we need</p> <p>8 to do so we can take it to the judge.</p> <p>9 I need an answer to the question, is</p> <p>10 she relying on information from the</p> <p>11 lawyers regarding the documents. I</p> <p>12 need -- that's a yes or no. That's</p> <p>13 not even questionable. If she says</p> <p>14 yes and you instruct her not to</p> <p>15 answer, we'll take it to the judge.</p> <p>16 We need an answer to that straight up.</p> <p>17 MS. O'DELL: So I want to make</p> <p>18 sure I understand. Are you asking her</p> <p>19 if she relies on these materials?</p> <p>20 MS. BROWN: No. Here's where</p> <p>21 we are. I want to know if she asked</p> <p>22 the lawyers a question about the</p> <p>23 documents, she got an answer and she's</p> <p>24 relying on that answer to form the</p>	<p style="text-align: right;">Page 88</p> <p>1 missing each other, so let me ask my</p> <p>2 question and you instruct.</p> <p>3 MS. O'DELL: I don't think we</p> <p>4 are.</p> <p>5 MS. BROWN: We'll have it on</p> <p>6 the record and be able to take it up.</p> <p>7 For the record, my position is, any</p> <p>8 information from counsel or otherwise,</p> <p>9 on which the witness relies for her</p> <p>10 opinion is plainly discoverable under</p> <p>11 the Federal Rules.</p> <p>12 MS. O'DELL: Disagree with that</p> <p>13 position.</p> <p>14 BY MS. BROWN:</p> <p>15 Q. Dr. Wolf, one quick question</p> <p>16 here, and then we'll certainly take a break.</p> <p>17 I know we've been going a while.</p> <p>18 Did counsel for the plaintiffs</p> <p>19 provide you with any information regarding</p> <p>20 internal company documents on which you are</p> <p>21 relying to form the basis of your opinions in</p> <p>22 this lawsuit?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 question. And answer the question to</p>
<p style="text-align: right;">Page 87</p> <p>1 basis of her opinion, and that is</p> <p>2 discoverable under the Federal Rules.</p> <p>3 So we're going to start with that</p> <p>4 question, did you rely on something</p> <p>5 the lawyers told you about the</p> <p>6 documents, and then if you want to</p> <p>7 instruct from there, we'll tee it up</p> <p>8 and talk to the judge about it because</p> <p>9 that's discoverable.</p> <p>10 MS. O'DELL: I think the issue</p> <p>11 is the discussion about "rely." And</p> <p>12 what -- but you're asking her about</p> <p>13 discussions with counsel. And that's</p> <p>14 different. And so she's not going to</p> <p>15 testify about discussions with</p> <p>16 counsel. The materials that she</p> <p>17 considered and she relied on are</p> <p>18 present in front of her and to her</p> <p>19 side.</p> <p>20 MS. BROWN: Let me --</p> <p>21 MS. O'DELL: That's what's</p> <p>22 discoverable and that's where we're</p> <p>23 going to stay.</p> <p>24 MS. BROWN: Okay. We're</p>	<p style="text-align: right;">Page 89</p> <p>1 the degree you understand it. If you</p> <p>2 don't understand the question, you</p> <p>3 don't have to answer it, Dr. Wolf.</p> <p>4 A. My understanding of the</p> <p>5 question, what I hear you asking me, is did I</p> <p>6 ask counsel questions about this, information</p> <p>7 I got from them, not from the documents but</p> <p>8 from the answer to my question, did I use</p> <p>9 that information to form my opinion? The</p> <p>10 answer to that is no.</p> <p>11 BY MS. BROWN:</p> <p>12 Q. Thank you, Dr. Wolf.</p> <p>13 MS. BROWN: Why don't we go</p> <p>14 ahead and take a break.</p> <p>15 MS. O'DELL: Okay.</p> <p>16 MS. BROWN: Thank you.</p> <p>17 THE VIDEOGRAPHER: Going off</p> <p>18 the record. The time is 10:21 a.m.</p> <p>19 (Recess taken from 10:21 a.m.</p> <p>20 to 10:33 a.m.)</p> <p>21 THE VIDEOGRAPHER: Back on the</p> <p>22 record. The time is 10:33 a.m.</p> <p>23 BY MS. BROWN:</p> <p>24 Q. Welcome back, Dr. Wolf.</p>

Judith K. Wolf, M.D.

Page 90	Page 92
<p>1 A. Thank you.</p> <p>2 Q. Dr. Wolf, counsel for the</p> <p>3 plaintiffs indicated to me earlier this</p> <p>4 morning, that there are some additional</p> <p>5 documents that you have reviewed since the</p> <p>6 time of your report. That would include the</p> <p>7 pending health Canada risk assessment; is</p> <p>8 that correct?</p> <p>9 A. Yes.</p> <p>10 Q. Okay. When did you review</p> <p>11 that?</p> <p>12 A. Sometime within the last few</p> <p>13 weeks. I don't remember the exact date.</p> <p>14 Q. Counsel indicated that you've</p> <p>15 reviewed an article with the lead author</p> <p>16 Taher, T-a-h-e-r; is that correct?</p> <p>17 A. That's correct.</p> <p>18 Q. When did you review that?</p> <p>19 A. Around the same time as the</p> <p>20 Canadian health assessment.</p> <p>21 Q. Were both the health Canada</p> <p>22 proposed report and the Taher article</p> <p>23 provided to you by counsel for the</p> <p>24 plaintiffs?</p>	<p>1 A. I don't have the supplemental</p> <p>2 materials. I just have the Taher somewhere.</p> <p>3 MS. BROWN: Counsel, has that</p> <p>4 material been provided to the doctor?</p> <p>5 MS. O'DELL: Yes.</p> <p>6 MS. BROWN: Okay. We'll</p> <p>7 request production of the supplemental</p> <p>8 materials as referenced in the Taher</p> <p>9 report.</p> <p>10 MS. O'DELL: Let me make sure.</p> <p>11 What do you mean "supplemental"? Let</p> <p>12 me make sure I understand what you're</p> <p>13 saying. She's provided the Taher and</p> <p>14 the -- she's provided the Taher paper</p> <p>15 and the causal assessment.</p> <p>16 MS. BROWN: Okay. The Taher</p> <p>17 paper makes references in numerous</p> <p>18 places to supplemental materials, and</p> <p>19 my question was whether you've</p> <p>20 provided those supplemental materials</p> <p>21 to the witness and if so, I'll request</p> <p>22 production of it.</p> <p>23 MS. O'DELL: Okay. Let me</p> <p>24 check that.</p>
Page 91	Page 93
<p>1 A. Yes.</p> <p>2 Q. Do you know if the Taher</p> <p>3 article is publicly available yet?</p> <p>4 A. I don't know. The copy that I</p> <p>5 have says that it's submitted for publication</p> <p>6 or is going to be submitted for publication.</p> <p>7 I haven't done a search to see if it's</p> <p>8 publicly available yet.</p> <p>9 Q. Have -- did you note in your</p> <p>10 review of the Taher article, that it</p> <p>11 references, in numerous places, supplemental</p> <p>12 materials?</p> <p>13 A. Yes.</p> <p>14 Q. Have you reviewed the</p> <p>15 supplemental materials on which Taher relies?</p> <p>16 A. I haven't reviewed them all.</p> <p>17 Some of them I had reviewed otherwise, but</p> <p>18 I -- I haven't reviewed them all, no.</p> <p>19 Q. Did plaintiffs' lawyers give</p> <p>20 you access to the supplemental materials</p> <p>21 relied on in Taher?</p> <p>22 A. I don't know.</p> <p>23 Q. Do you have those materials</p> <p>24 with you here today?</p>	<p>1 MS. BROWN: Okay. Thank you.</p> <p>2 BY MS. BROWN:</p> <p>3 Q. For your purposes, though,</p> <p>4 Dr. Wolf, it's not something you have on hand</p> <p>5 sitting here today?</p> <p>6 A. It's not.</p> <p>7 Q. And because these materials</p> <p>8 were recently provided to you by counsel for</p> <p>9 the plaintiffs, they did not form the basis</p> <p>10 of the report that you authored, dated</p> <p>11 November 16th, 2018; is that fair?</p> <p>12 A. That's fair.</p> <p>13 Q. Okay. Counsel indicated you</p> <p>14 have seen some of the other expert reports</p> <p>15 from witnesses for plaintiffs' lawyers in</p> <p>16 this litigation; is that right?</p> <p>17 A. That's correct.</p> <p>18 Q. Okay. Can you tell me which</p> <p>19 ones you've reviewed?</p> <p>20 A. Can I see the list of all of</p> <p>21 them? I don't --</p> <p>22 MS. O'DELL: I don't have a</p> <p>23 list.</p> <p>24 A. I reviewed some of the</p>

24 (Pages 90 to 93)

Judith K. Wolf, M.D.

<p style="text-align: right;">Page 94</p> <p>1 epidemiology ones, but I don't remember the 2 names. I reviewed part of one of the other 3 GYN oncology ones. It seemed to be similar 4 to mine. I don't read it all. I didn't read 5 the third. I can't remember. 6 BY MS. BROWN: 7 Q. Okay. So let's back up. How 8 many -- I assume the reports of these other 9 experts were provided to you from the 10 plaintiffs' lawyers; is that right? 11 A. That's correct. 12 Q. Okay. When did you -- did you 13 receive them all at once? 14 A. I did. 15 Q. And do you recall approximately 16 when you received them? 17 A. I don't know. Sometime after 18 the reports were all submitted. I don't 19 remember the date. 20 Q. Okay. Prior to issuing your 21 report, dated November 16th, 2018, did you 22 see any other expert reports? 23 MS. O'DELL: Object to the 24 form.</p>	<p style="text-align: right;">Page 96</p> <p>1 for the plaintiffs submitted reports like 2 yours from a number of different people, 3 right? 4 A. Yes. 5 Q. And there came a point in time 6 when the plaintiffs' lawyers sent you some of 7 those reports, correct? 8 A. Yes. 9 Q. Did they send you completed 10 reports or did they send you draft reports? 11 A. They sent me the completed 12 reports that had already been submitted and 13 turned in. I didn't see any drafts of 14 anybody else's reports. 15 Q. Got it. So in writing your 16 report in this case, which we have marked as 17 Exhibit 7 and which is dated November 16th, 18 2018, you did not rely on the opinions of 19 another expert. Fair? 20 MS. O'DELL: Object to the 21 form. 22 A. My understanding what you're 23 asking me is, did I rely on the opinions of 24 the expert reports in this case? No, I had</p>
<p style="text-align: right;">Page 95</p> <p>1 A. I didn't see any of the expert 2 reports for this case. 3 BY MS. BROWN: 4 Q. Okay. In -- fair to say, then, 5 the opinions that you have contained in your 6 report, dated November 16, 2018, you're not 7 relying on any other plaintiff expert in 8 forming these opinions; is that right? 9 MS. O'DELL: Object to the 10 form. Other than cited in her actual 11 report. 12 MS. BROWN: Counsel, it's 13 objection to form. Don't testify for 14 her. 15 A. Well, the Plunkett deposition, 16 I believe, is a reference in my report. 17 BY MS. BROWN: 18 Q. Well, it couldn't be a 19 reference in your report because it didn't 20 happen till after your report, right? 21 A. Sorry. Yes. 22 Q. Okay. So we're going to get to 23 Plunkett. Let's keep that to the side. What 24 I'm interested -- you understand that lawyers</p>	<p style="text-align: right;">Page 97</p> <p>1 not seen them. 2 BY MS. BROWN: 3 Q. That was exactly what I was 4 asking. Did you type the report that we've 5 marked as Exhibit 7 yourself, Doctor? 6 A. You mean my fingers on? 7 Q. Correct. 8 A. I typed some of the drafts. 9 The final report, I dictated most of it. 10 Q. So to whom did you dictate the 11 report? 12 A. I don't remember her name. 13 Someone who works with the plaintiffs' 14 attorneys. I'm not a typist. 15 Q. Fair enough. How many hours 16 did you spend preparing the report that we've 17 marked as Exhibit 7? 18 MS. O'DELL: Object to the 19 form. 20 A. An estimate of how much time, I 21 would say 20 to 30 hours, total. I mean, 22 there were several drafts and then even when 23 I thought it was a final draft, a few tweaks 24 and revisions here and there. And I still</p>

25 (Pages 94 to 97)

<p style="text-align: right;">Page 98</p> <p>1 see some typos and errors that if I had it  2 back, I would fix and change.  3 BY MS. BROWN:  4 Q. Did someone other than you  5 write some of the information contained in  6 Exhibit 7?  7 A. Exhibit 7 is my report?  8 Q. Correct.  9 A. Other than things that I have  10 in quotes that I've pulled from articles, no  11 one else wrote it.  12 Q. Other than information that you  13 have in quotes, it's your testimony that all  14 of the language that we see in Exhibit 7 is  15 your own; is that right?  16 MS. O'DELL: Object to the  17 form.  18 A. I wrote the report, the entire  19 report.  20 BY MS. BROWN:  21 Q. Do you know who Dr. Blair Smith  22 is?  23 A. Dr. Blair Smith?  24 Q. Correct.</p>	<p style="text-align: right;">Page 100</p> <p>1 A. Yes.  2 Q. You wrote that sentence?  3 A. Yes.  4 Q. Okay. Skipping down to the  5 paragraph below "Summary of Epidemiological  6 Evidence," the paragraph that begins, "When  7 looking at epidemiological studies in their  8 totality" -- are you with me?  9 A. Yes.  10 Q. Did you write this entire  11 paragraph here?  12 A. Yes.  13 Q. Did you give Dr. Ellen Blair  14 Smith the authority to copy that into her  15 report?  16 A. I didn't speak with Dr. Ellen  17 Blair Smith.  18 Q. Are you surprised to learn that  19 the information that you wrote on page 8 also  20 appears in Dr. Blair Smith's report, which  21 I'm handing you as Exhibit 8.  22 (Deposition Exhibit 8 marked  23 for identification.)  24 MS. O'DELL: Object to the</p>
<p style="text-align: right;">Page 99</p> <p>1 A. Is that -- is that Ellen Blair  2 Smith?  3 Q. Correct.  4 A. I do know her, yes.  5 Q. Okay. Did you work with  6 Dr. Blair Smith on your report?  7 A. I did not.  8 Q. Okay. Do you know why a  9 paragraph in your report would be exactly the  10 same as that contained in Dr. Smith -- Blair  11 Smith's report?  12 A. I don't.  13 Q. Okay. Let's take a look at  14 that. If you look at page 8 of your report,  15 Doctor. Right above the bold text that says  16 "Meta-Analysis," do you see that sentence?  17 A. Uh-huh.  18 Q. It says, "All of the cohort  19 studies are limited by lack of power, failure  20 to make the appropriate queries, selection  21 bias and short follow-up."  22 Do you see that?  23 A. I do.  24 Q. Are those your words?</p>	<p style="text-align: right;">Page 101</p> <p>1 form.  2 A. Is it marked somewhere here  3 what it is?  4 BY MS. BROWN:  5 Q. It is. If you look at page 16,  6 Doctor. And I'll direct you to the -- one,  7 two, three -- the end of the first -- go to  8 the third complete paragraph that begins "In  9 my opinion." You with me?  10 A. Uh-huh.  11 Q. Okay. And the end of that  12 paragraph contains the very first sentence I  13 asked you to read, right? "All of the cohort  14 studies are limited by lack of power."  15 Correct?  16 MS. O'DELL: Object to the  17 form.  18 A. What I can say when I look at  19 these, she cited the same limitations as I  20 did, and that's not that surprising to me.  21 BY MS. BROWN:  22 Q. Okay. And if you look at --  23 when looking at the epidemiology studies, do  24 you see that that paragraph is the same,</p>



Page 102	Page 104
<p>1 Doctor?</p> <p>2 MS. O'DELL: Object to the</p> <p>3 form. Are you referring to when --</p> <p>4 the fourth -- the last paragraph above</p> <p>5 "Mechanism"?</p> <p>6 MS. BROWN: "When looking at</p> <p>7 epidemiological studies."</p> <p>8 BY MS. BROWN:</p> <p>9 Q. Do you see that, Doctor?</p> <p>10 A. Is that the last -- you're</p> <p>11 talking about the last paragraph?</p> <p>12 Q. Sorry, of your report. Page 8.</p> <p>13 Is that your language, Doctor?</p> <p>14 A. This is my language; this is</p> <p>15 her language. I see some words that are the</p> <p>16 same. The conclusions are similar, but --</p> <p>17 BY MS. BROWN:</p> <p>18 Q. And you see some sentences --</p> <p>19 MS. O'DELL: Excuse me. She's</p> <p>20 not finished.</p> <p>21 Would you like to finish,</p> <p>22 Dr. Wolf?</p> <p>23 A. But I mean, I'm just mostly</p> <p>24 looking at the length of it and it's not even</p>	<p>1 BY MS. BROWN:</p> <p>2 Q. In writing your report, Doctor,</p> <p>3 did you take any language from other</p> <p>4 articles?</p> <p>5 MS. O'DELL: Sorry, do you mean</p> <p>6 quote language?</p> <p>7 BY MS. BROWN:</p> <p>8 Q. Did you -- is any of the</p> <p>9 language contained in your report not your</p> <p>10 own; meaning did it come from publicly</p> <p>11 available sources or articles?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. Quotes in my report came from</p> <p>15 articles.</p> <p>16 BY MS. BROWN:</p> <p>17 Q. In writing your report, did you</p> <p>18 consult Wikipedia?</p> <p>19 A. Did I do what?</p> <p>20 Q. Did you consult Wikipedia?</p> <p>21 A. No.</p> <p>22 Q. Do you know what that is?</p> <p>23 A. I do, but I don't consult for</p> <p>24 any medical literature or scientific</p>
Page 103	Page 105
<p>1 the same length, so I don't see how it's the</p> <p>2 exact same thing.</p> <p>3 BY MS. BROWN:</p> <p>4 Q. You see some sentences that are</p> <p>5 identical, right, Doctor?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. I don't see -- give me a chance</p> <p>9 to look at the entire thing.</p> <p>10 BY MS. BROWN:</p> <p>11 Q. Sure.</p> <p>12 A. Because I don't see -- I see</p> <p>13 one sentence is the same. "There appears to</p> <p>14 be no significant publication bias."</p> <p>15 Q. And also, Doctor, the sentence</p> <p>16 that we just talked about, "All of the cohort</p> <p>17 studies are limited by failure," that's the</p> <p>18 same, right?</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 A. No, it's not the same. It</p> <p>22 raises the same points, but it's not the</p> <p>23 same.</p> <p>24</p>	<p>1 literature.</p> <p>2 Q. You don't consider Wikipedia to</p> <p>3 be a scientifically reliable source; is that</p> <p>4 right?</p> <p>5 A. I don't.</p> <p>6 Q. Okay. And in coming up with</p> <p>7 your report, that's not something that you</p> <p>8 cut and pasted from; is that right?</p> <p>9 A. I didn't look at Wikipedia to</p> <p>10 prepare my report.</p> <p>11 Q. And there aren't parts of your</p> <p>12 report that someone else did for you; is that</p> <p>13 right?</p> <p>14 MS. O'DELL: Object to form.</p> <p>15 A. That's right.</p> <p>16 BY MS. BROWN:</p> <p>17 Q. On page 2 of your report,</p> <p>18 Doctor, you indicate the method -- you talk</p> <p>19 about the methodology you employed here. Do</p> <p>20 you see that?</p> <p>21 A. Yes.</p> <p>22 Q. Describe for us -- I understand</p> <p>23 you have it discussed in your report, but</p> <p>24 describe for us what methodology you employed</p>

<p style="text-align: right;">Page 106</p> <p>1 to answer the question in this case.</p> <p>2 A. So that's -- this is why I</p> <p>3 provided the UpToDate evidence-based</p> <p>4 medicine. So I started with the question.</p> <p>5 The question is, does general use of talcum</p> <p>6 powder cause ovarian cancer. And then</p> <p>7 researched the literature, looking for human</p> <p>8 studies, animal studies, in vitro studies.</p> <p>9 And then evaluated the validity of the</p> <p>10 studies as a whole, by looking at their</p> <p>11 materials and methods, the results and</p> <p>12 conclusions that they drew, what journal</p> <p>13 the -- if it was published in a peer-reviewed</p> <p>14 journal, what journal it was in, what year it</p> <p>15 was published, were there multiple studies</p> <p>16 showing similar findings, were there</p> <p>17 outliers, and then from that formed my</p> <p>18 opinion.</p> <p>19 Q. And your conclusion is that</p> <p>20 genital talc use causes ovarian cancer,</p> <p>21 correct?</p> <p>22 A. That is -- genital talcum</p> <p>23 powder use, yes.</p> <p>24 Q. And is your opinion limited to</p>	<p style="text-align: right;">Page 108</p> <p>1 a woman is exposed to when she uses it</p> <p>2 perineally?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 A. Are you asking me if I've done</p> <p>6 a study? I'm not sure what you're asking.</p> <p>7 BY MS. BROWN:</p> <p>8 Q. In forming your opinion in this</p> <p>9 case, that talcum powder causes ovarian</p> <p>10 cancer, have you attempted to quantify how</p> <p>11 much talcum powder causes ovarian cancer?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. In reviewing the articles, some</p> <p>15 of the studies have tried to look at length</p> <p>16 of time, frequency of use, years of use,</p> <p>17 total applications. It's hard for me to know</p> <p>18 what that amount is, because I don't know in</p> <p>19 each individual woman, like, how much she put</p> <p>20 in. And I also don't know in each individual</p> <p>21 woman, what her risk might be from the talc,</p> <p>22 based on her own genetic makeup and other</p> <p>23 things in her immune system and how she</p> <p>24 responds to it.</p>
<p style="text-align: right;">Page 107</p> <p>1 a certain quantity of genital powder use?</p> <p>2 MS. O'DELL: Object to the</p> <p>3 form.</p> <p>4 A. It's not. And I had a hard</p> <p>5 time with that issue just because I don't</p> <p>6 know what a dose is, because how much do you</p> <p>7 shake, how much do you apply, it's hard to</p> <p>8 know a certain amount.</p> <p>9 BY MS. BROWN:</p> <p>10 Q. In forming your opinions in</p> <p>11 this case, have you attempted to quantify how</p> <p>12 much talcum powder an individual woman would</p> <p>13 be exposed to when using it in the genital</p> <p>14 area?</p> <p>15 MS. O'DELL: Objection to the</p> <p>16 form. Dr. Wolf's being offered for</p> <p>17 general causation, not for a specific</p> <p>18 plaintiff.</p> <p>19 A. Repeat the question again.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. Sure. We were talking about</p> <p>22 how much powder use, in your opinion, causes</p> <p>23 ovarian cancer. And my question is, have you</p> <p>24 attempted to quantify how much talcum powder</p>	<p style="text-align: right;">Page 109</p> <p>1 BY MS. BROWN:</p> <p>2 Q. Have you calculated how much</p> <p>3 genital talc powder is needed to cause</p> <p>4 ovarian cancer?</p> <p>5 MS. O'DELL: Object to the</p> <p>6 form.</p> <p>7 A. Again, I think that my -- it's</p> <p>8 difficult, even from reviewing the literature</p> <p>9 and from all the questions that were asked,</p> <p>10 queried, to know how much any woman is</p> <p>11 exposed to when she uses it.</p> <p>12 BY MS. BROWN:</p> <p>13 Q. So what you're identifying is</p> <p>14 one of the limitations of the talc</p> <p>15 epidemiology, correct?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 A. What I'm identifying is one of</p> <p>19 the limitations of knowing what dose is safe.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. In your mind, is there a dose</p> <p>22 of genital talcum powder that does not cause</p> <p>23 ovarian cancer?</p> <p>24 A. I don't know.</p>



Judith K. Wolf, M.D.

Page 110	Page 112
<p>1 Q. Have you investigated whether</p> <p>2 or not there is an amount of talcum powder</p> <p>3 that can be used perineally without</p> <p>4 increasing the risk for ovarian cancer?</p> <p>5 MS. O'DELL: Objection, asked</p> <p>6 and answered.</p> <p>7 A. I don't know if there is an</p> <p>8 amount that's safe. I don't know how I could</p> <p>9 ethically test that. I'm not aware of</p> <p>10 anything in the literature that says, "This</p> <p>11 dose is safe, this dose is not." Because</p> <p>12 even in all of the studies, what is a dose?</p> <p>13 One shake? Two shakes? A hard shake? A</p> <p>14 light shake?</p> <p>15 BY MS. BROWN:</p> <p>16 Q. Is your opinion, Dr. Wolf, that</p> <p>17 some amount of perineal talcum powder use</p> <p>18 causes ovarian cancer, is that opinion</p> <p>19 dependent on an assumption that talcum powder</p> <p>20 is contaminated with asbestos?</p> <p>21 A. No, because --</p> <p>22 MS. O'DELL: Object to the</p> <p>23 form.</p> <p>24 A. -- talcum powder is a mix of</p>	<p>1 BY MS. BROWN:</p> <p>2 Q. Are you referring to</p> <p>3 plaintiffs' expert witness reports?</p> <p>4 A. Let me look in my report here</p> <p>5 for just one second. I'm sorry, I just need</p> <p>6 to look in here to find it. Because there is</p> <p>7 plaintiffs' expert witness, but --</p> <p>8 MS. O'DELL: Take your time,</p> <p>9 Doctor.</p> <p>10 THE WITNESS: All right.</p> <p>11 BY MS. BROWN:</p> <p>12 Q. And, Doctor, maybe I can help.</p> <p>13 On page 9 of your report, you reference in</p> <p>14 the third paragraph --</p> <p>15 A. Yes.</p> <p>16 Q. -- that you believe Dr. Longo</p> <p>17 and Rigler have demonstrated talc to be --</p> <p>18 may be contaminated with asbestos. Do you</p> <p>19 see that?</p> <p>20 A. That's correct. And then also</p> <p>21 there's the deposition of John Hopkins.</p> <p>22 Q. What information are you</p> <p>23 relying on from the deposition of John</p> <p>24 Hopkins?</p>
Page 111	Page 113
<p>1 things, right? It's a mix of platy talc,</p> <p>2 fibrous talc, asbestos, heavy metals have</p> <p>3 been found in it, nickel and chromium and</p> <p>4 cobalt, and then all of the fragrances. And</p> <p>5 I have seen the expert report of Michael</p> <p>6 Crowley, where he assessed the irritant</p> <p>7 quality of some of the fragrances. And so</p> <p>8 when I look at the talcum powder product, I</p> <p>9 look at it as a whole.</p> <p>10 BY MS. BROWN:</p> <p>11 Q. Do you believe there is</p> <p>12 asbestos in talcum powder?</p> <p>13 A. I've seen evidence that there</p> <p>14 is asbestos found in at least 60 percent of</p> <p>15 talcum powder that's been evaluated that I've</p> <p>16 seen.</p> <p>17 Q. Is it your opinion in this</p> <p>18 case, that 60 percent of talcum powder is</p> <p>19 contaminated with asbestos?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form, asked and answered.</p> <p>22 A. In the reports that I've seen,</p> <p>23 60 percent of the time there was evidence of</p> <p>24 asbestos.</p>	<p>1 A. A report that I saw.</p> <p>2 Q. Okay. What -- you just pulled</p> <p>3 out a document from your binder. What is</p> <p>4 that, Doctor?</p> <p>5 A. That is the -- this is part of</p> <p>6 the deposition, right? Yeah. It's in my</p> <p>7 references.</p> <p>8 BY MS. BROWN:</p> <p>9 Q. Okay. Can I see it?</p> <p>10 A. Yeah. It was just printed</p> <p>11 separately so it can be bigger.</p> <p>12 Q. And what you have just handed</p> <p>13 me, Dr. Wolf, is -- it bears an exhibit</p> <p>14 sticker Hopkins 28, and do you know -- it</p> <p>15 appears to be a large printout of some kind</p> <p>16 of Excel chart. Do you know what this is?</p> <p>17 A. This was from his deposition of</p> <p>18 testing of talcum powder products.</p> <p>19 Q. Did you read the deposition of</p> <p>20 Dr. John Hopkins?</p> <p>21 A. I did not see the entire</p> <p>22 deposition.</p> <p>23 Q. Were you provided with the</p> <p>24 deposition?</p>

29 (Pages 110 to 113)

<p style="text-align: right;">Page 114</p> <p>1 A. If I was, I don't recall.  2 Q. Did you ask to see Exhibit 28  3 to John Hopkins' deposition?  4 A. Specifically ask for that? I  5 did not. I was provided it.  6 Q. So the lawyers decided to give  7 you John Hopkins' Exhibit 28; is that right?  8 A. I received it from the lawyers.  9 Q. Okay. And do you know what's  10 contained within Exhibit 28?  11 A. Do I know what's contained  12 within it? It's a chart of testing of talcum  13 powder from various sources and various time  14 periods, how the test was done and what the  15 results showed, as well as a few other things  16 on there.  17 Q. Did you -- do you know who  18 created this chart, Dr. Wolf?  19 A. I don't.  20 Q. Do you have any idea if the  21 four pages of testing contained in Exhibit 28  22 to John Hopkins' deposition is representative  23 of all the testing that was done on Johnson  24 &amp; Johnson's product?</p>	<p style="text-align: right;">Page 116</p> <p>1 BY MS. BROWN:  2 Q. So in terms of interpreting the  3 findings of the chart, which list a number of  4 different test methods, you'd agree you're  5 not a microscopist. True?  6 MS. O'DELL: Object to the  7 form.  8 A. Can you define what a  9 "microscopist" is in your -- from what you're  10 asking me?  11 BY MS. BROWN:  12 Q. Sure. Are you -- do you hold  13 yourself out to the medical community as an  14 expert in light microscopy in looking --  15 using various different types of microscopy  16 to study minerals?  17 A. No, I'm not.  18 Q. And you understand that the  19 chart you just handed me includes a number of  20 different test methods, correct?  21 A. Yes.  22 Q. And you're not aware whether  23 those test methods are even capable of  24 distinguishing or finding asbestos, correct?</p>
<p style="text-align: right;">Page 115</p> <p>1 MS. O'DELL: Object to the  2 form.  3 A. I don't know if it is or it  4 isn't, but what I know is what I see there,  5 is that the results show evidence of asbestos  6 contamination over a period of time.  7 BY MS. BROWN:  8 Q. Do you know -- are you familiar  9 with the test method "XRD"?  10 A. I'm not a geologist and I don't  11 understand the test methods. So I'm going to  12 have to say I would defer to the geologist to  13 answer a question about that.  14 Q. So in terms of whether or not a  15 test method known as "XRD" is even capable of  16 distinguishing between asbestiform and  17 nonasbestiform minerals, you would defer to  18 somebody else on that question; is that  19 right?  20 MS. O'DELL: Object to the  21 form.  22 A. What I'm going to say is that  23 the details of how that's performed, I am not  24 aware of.</p>	<p style="text-align: right;">Page 117</p> <p>1 MS. O'DELL: Object to the  2 form.  3 A. I'm assuming since they found  4 asbestos, that they are. I'm assuming that  5 since they were used to try to identify  6 asbestos, that they are.  7 BY MS. BROWN:  8 Q. Show me on this chart what  9 asbestos finding you're referring to, Doctor.  10 A. The second page, tremolite --  11 here, tremolite, tremolite, actinolite  12 fibrous talc, tremolite, tremolite,  13 actinolite, tremolite, actinolite -- sorry.  14 I'm sorry. I didn't mean to go so fast. I'm  15 looking at what tests revealed.  16 Q. And are you familiar, Doctor,  17 with the fact that tremolite exists both as  18 tremolite asbestos and as the nonasbestiform  19 version of that mineral? Are you aware of  20 that?  21 A. Yes.  22 Q. Okay. And do you -- what  23 information are you relying on that the  24 tremolite that's indicated in that chart is</p>

Judith K. Wolf, M.D.

Page 118	Page 120
<p>1 tremolite asbestos and not the nonasbestiform 2 version? 3 MS. O'DELL: Object to the 4 form. 5 A. I wasn't given that 6 information. All I can say is that there 7 is -- some of them say "tremolite," others 8 say "fibrous crocidolite, fibrous tremolite, 9 actinolite." 10 BY MS. BROWN: 11 Q. And whether the information 12 that's contained on the exhibit from 13 Dr. Hopkins' deposition that was given to you 14 by the plaintiffs' lawyers, whether that, in 15 fact, indicates a finding of asbestos, you're 16 not the expert in that. Fair? 17 MS. O'DELL: Object to the 18 form. 19 A. I'm looking at the results, and 20 even if I take out ones that just say 21 "tremolite," and don't tell me if it's the 22 asbestos form or not, I see -- I see others 23 that do say "asbestos, asbestos fibers, 24 fibrous talc" --</p>	<p>1 BY MS. BROWN: 2 Q. And have you reviewed -- what 3 you just pointed me to, Dr. Wolf, is a 4 testing from the 1970s by Dr. Langer, 5 correct? 6 A. Can I see the whole thing? 7 Q. Sure. You pointed me to 8 Dr. Langer, Mount Sinai, 1975, right? 9 A. Yes. 10 Q. Okay. Are you familiar with 11 Dr. Langer's testing of talcum powder 12 products in the 1970s? 13 MS. O'DELL: Object to the 14 form. And if you're going to ask 15 questions about the exhibit, if you'll 16 put it back in front of the witness. 17 MS. BROWN: Absolutely. 18 MS. O'DELL: You've asked a 19 question, she's going to respond, so 20 hand her back Exhibit 28. 21 MS. BROWN: I'm not sure she 22 needs it to answer it. 23 MS. O'DELL: I'm sure counsel 24 has a copy of Exhibit 28 if you -- if</p>
Page 119	Page 121
<p>1 BY MS. BROWN: 2 Q. Show me where it says 3 "asbestos." 4 A. This one says "confirmed 5 asbestos." 6 Q. And did you ask -- did you look 7 at the product that was being tested here, 8 Doctor? Meaning, do you even know if this 9 was cosmetic talcum powder? 10 MS. O'DELL: Object to the 11 form. If you want her to look at the 12 exhibit in full, you can ask a 13 question. 14 BY MS. BROWN: 15 Q. Sure. You just pointed me to a 16 line on the chart that says they're testing 17 ore mud. Do you have any source of 18 information that would lead you to believe 19 that that was ore that was used to make 20 cosmetic talc? 21 MS. O'DELL: Object to the 22 form. 23 A. Are you talking about the one 24 below it that says --</p>	<p>1 you need it. I'm sure you have it 2 committed to memory. 3 A. Can you ask the question again? 4 BY MS. BROWN: 5 Q. Sure. In supporting your view 6 that 60 percent of talcum powder products are 7 contaminated with asbestos, you've handed me 8 a chart that the lawyers gave you from 9 Dr. Hopkins' deposition and pointed me to an 10 entry of a test that Dr. Langer performed in 11 the 1970s, right? 12 MS. O'DELL: Object to the 13 form, misstates her testimony as to 14 the percentage. It's not what she 15 referred to. 16 A. That's the line I pointed at. 17 BY MS. BROWN: 18 Q. Okay. But to be fair, 19 Dr. Wolf, you are not familiar with the 20 testing that Dr. Langer did on talcum powder 21 products in the 1970s, right? 22 A. I am not. 23 Q. Okay. And you are certainly 24 not aware of the work that the Food and Drug</p>

31 (Pages 118 to 121)

Judith K. Wolf, M.D.

Page 122	Page 124
<p>1 Administration did to check all of the work 2 that Dr. Langer did, correct? 3 MS. O'DELL: Object to the 4 form. 5 A. I am not aware of all of the 6 testing or checking that the FDA did to test 7 Dr. Langer's work. 8 BY MS. BROWN: 9 Q. And so in giving that 10 testimony, you were not aware that the FDA 11 tested that Dr. Langer sample and determined 12 there was no asbestos? 13 A. That specific -- 14 MS. O'DELL: Excuse me. 15 BY MS. BROWN: 16 Q. Let me just -- 17 MS. O'DELL: No. I get to -- 18 BY MS. BROWN: 19 Q. I need to ask my question. 20 MS. O'DELL: I need to have the 21 opportunity to object. If you'd give 22 me just a moment. Object to the form 23 of the question. Misstates the 24 record.</p>	<p>1 Q. Did you review the testing that 2 the FDA did of Johnson's Baby Powder in the 3 1970s? 4 MS. O'DELL: Object to the 5 form. 6 A. I don't recall reviewing in 7 detail the testing that they did. 8 BY MS. BROWN: 9 Q. Were you aware that the FDA 10 determined, based on its own testing of 11 Johnson's baby powder product in the 1970s, 12 that it was asbestos free? 13 MS. O'DELL: Object to the 14 form. 15 A. I was aware that they reported 16 that. 17 BY MS. BROWN: 18 Q. Did you consider the finding of 19 the United States Food and Drug 20 Administration's own testing of baby powder's 21 product, before coming to your opinion that 22 60 percent of baby powder is contaminated 23 with asbestos? 24 MS. O'DELL: Object to the</p>
Page 123	Page 125
<p>1 MS. BROWN: But here's what 2 happened. I didn't get the question 3 out. 4 MS. O'DELL: Yes, you did. 5 MS. BROWN: So let me get the 6 question on the record -- 7 MS. O'DELL: Yes, you did. 8 MS. BROWN: -- and then we'll 9 leave time for Ms. O'Dell to object 10 and then, Doctor, you can answer. 11 So my question was, you're not 12 aware that the FDA tested all of the 13 Langer samples that were conducted in 14 the 1970s and determined that J&amp;J's 15 product was free from asbestos, right? 16 MS. O'DELL: Object to the 17 form, misstates the record. 18 A. I'm not aware that the FDA 19 tested all of Dr. Langer's testing, no. 20 BY MS. BROWN: 21 Q. Were you aware that the FDA 22 tested Johnson &amp; Johnson's baby powder in the 23 1970s at all? 24 A. Yes.</p>	<p>1 form. 2 A. What I said, I believe, was 3 that what I saw of the samples that I saw 4 tested, 60 percent showed evidence. I'm not 5 saying that -- I didn't say that -- what I 6 said was, of what I saw, 60 percent showed 7 evidence of asbestos. 8 BY MS. BROWN: 9 Q. And you're getting that 60 10 percent figure from an expert report for a 11 plaintiffs' lawyer in litigation, correct? 12 MS. O'DELL: Object to the 13 form. 14 A. Are you referring to the Longo 15 and Rigler report? 16 BY MS. BROWN: 17 Q. I am. 18 A. Yes. 19 Q. Okay. So the basis for your 20 opinion that 60 percent of baby powder 21 products are contaminated with asbestos is a 22 plaintiffs' expert report in litigation. 23 True? 24 MS. O'DELL: Object to the</p>

32 (Pages 122 to 125)

Judith K. Wolf, M.D.

Page 126	Page 128
<p>1 form.</p> <p>2 A. My -- 60 percent of what I saw</p> <p>3 tested had evidence.</p> <p>4 BY MS. BROWN:</p> <p>5 Q. So the entire basis of your</p> <p>6 opinion that 60 percent of what was tested</p> <p>7 had asbestos comes from this Longo report,</p> <p>8 right?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. 60 percent of what I saw.</p> <p>12 BY MS. BROWN:</p> <p>13 Q. What methodology did you employ</p> <p>14 in terms of weighting the evidence from</p> <p>15 Dr. Longo, a plaintiffs' expert witness, or</p> <p>16 the Food and Drug Administration?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form.</p> <p>19 A. I will have to say I took them</p> <p>20 both into consideration. Given that there's</p> <p>21 been a continued concern since the 1970s and</p> <p>22 beyond, that there is a relationship with</p> <p>23 general talcum powder use and ovarian cancer,</p> <p>24 I had to look at all of the information. And</p>	<p>1 tested baby powder in 2009 and 2010?</p> <p>2 A. I don't recall.</p> <p>3 Q. Is it important to you, to have</p> <p>4 considered that information before offering</p> <p>5 an expert opinion that baby powder's</p> <p>6 contaminated with asbestos?</p> <p>7 MS. O'DELL: Object to the</p> <p>8 form.</p> <p>9 A. Can you show me that</p> <p>10 information?</p> <p>11 BY MS. BROWN:</p> <p>12 Q. Sure.</p> <p>13 THE WITNESS: Can you pull up</p> <p>14 the Longo report for me?</p> <p>15 (Deposition Exhibit 9 marked</p> <p>16 for identification.)</p> <p>17 BY MS. BROWN:</p> <p>18 Q. I'm marking, Dr. Wolf, as</p> <p>19 Exhibit 9 to your deposition, a printout from</p> <p>20 the FDA's website regarding talc, and this,</p> <p>21 I'll represent to you, is a report from the</p> <p>22 FDA's testing of baby powder products for</p> <p>23 asbestos in 2009-2010. Certainly take as</p> <p>24 long as you need to review it, but I'd refer</p>
Page 127	Page 129
<p>1 if there is any asbestos in baby powder, it's</p> <p>2 one of the components that could be</p> <p>3 carcinogenic.</p> <p>4 BY MS. BROWN:</p> <p>5 Q. Okay. We're talking about the</p> <p>6 basis for your opinion to believe there is</p> <p>7 asbestos in baby powder. Are you with me?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. Yes.</p> <p>11 BY MS. BROWN:</p> <p>12 Q. Okay. And I understand one of</p> <p>13 the things you relied on was Dr. Longo's</p> <p>14 report, right?</p> <p>15 A. Yes.</p> <p>16 Q. And you are testifying that you</p> <p>17 also took into consideration the FDA's</p> <p>18 testing in the 1970s, correct?</p> <p>19 A. Yes.</p> <p>20 Q. Did you consider the FDA's</p> <p>21 testing in 2009 and 2010?</p> <p>22 A. I'd have to look at that</p> <p>23 information.</p> <p>24 Q. Did you know that the FDA</p>	<p>1 you to the very last page, which tests the</p> <p>2 Johnson's baby powder product and reports, by</p> <p>3 both PLM and TEM, no asbestos.</p> <p>4 MS. O'DELL: Would you -- would</p> <p>5 you mind -- is it 9? Exhibit 9?</p> <p>6 MS. BROWN: Yes. Sorry,</p> <p>7 Exhibit 9. Sorry.</p> <p>8 MS. O'DELL: And feel free to</p> <p>9 take an opportunity to review</p> <p>10 Exhibit 9, Dr. Wolf.</p> <p>11 BY MS. BROWN:</p> <p>12 Q. Dr. Wolf, I see you're looking</p> <p>13 at the Longo report, which I'm going to give</p> <p>14 you plenty of time to look at, but I just</p> <p>15 want to ask you a question about Exhibit 9,</p> <p>16 the FDA's testing.</p> <p>17 A. And what is your question?</p> <p>18 Q. Were you aware of the FDA's</p> <p>19 testing of Johnson's baby powder products in</p> <p>20 2009 and 2010?</p> <p>21 A. I can't recall specifically</p> <p>22 that I was aware of that. Am I surprised</p> <p>23 that they tested? I'm not.</p> <p>24 Q. Right. So what -- did you</p>

33 (Pages 126 to 129)



Judith K. Wolf, M.D.

Page 130	Page 132
<p>1 consider third-party testing of Johnson's</p> <p>2 baby powder, like Princeton, MIT, Colorado</p> <p>3 School of Mines? Did you consider any of</p> <p>4 those testings?</p> <p>5 MS. O'DELL: Object to the</p> <p>6 form.</p> <p>7 A. Well, some of those were on</p> <p>8 this report.</p> <p>9 BY MS. BROWN:</p> <p>10 Q. Did you consider the testing</p> <p>11 that they did in connection with the 1970s</p> <p>12 Langer findings that determined there was no</p> <p>13 asbestos in Johnson's baby powder?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form, misstates the record.</p> <p>16 A. I'm getting a little confused</p> <p>17 about what you're asking, about "the</p> <p>18 consider." I mean, I considered everything</p> <p>19 that I saw.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. And that's what I'm trying to</p> <p>22 find out. So I understand you are here today</p> <p>23 giving us an opinion that baby powder</p> <p>24 contains asbestos. True?</p>	<p>1 A. Yes. As well as the Hopkins</p> <p>2 data.</p> <p>3 BY MS. BROWN:</p> <p>4 Q. But we talked about --</p> <p>5 MS. O'DELL: Excuse me.</p> <p>6 Dr. Wolf, when you say the "Hopkins</p> <p>7 data," are you referring to the</p> <p>8 Exhibit 28?</p> <p>9 THE WITNESS: Yes.</p> <p>10 BY MS. BROWN:</p> <p>11 Q. We talked about Exhibit 28,</p> <p>12 Doctor, and admittedly you're not able to</p> <p>13 interpret the testing methods that were used</p> <p>14 there, correct?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 commentary. It's not what she said.</p> <p>17 It misrepresents her testimony.</p> <p>18 A. You asked me about --</p> <p>19 MS. BROWN: Hold on.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. Your counsel thinks I'm</p> <p>22 misrepresenting your testimony and I</p> <p>23 certainly don't mean to do that. We agreed,</p> <p>24 Doctor, did we not, that you're not a</p>
Page 131	Page 133
<p>1 A. Some baby powder, I believe,</p> <p>2 contains asbestos, yes.</p> <p>3 Q. What percentage of baby powder</p> <p>4 contains asbestos?</p> <p>5 A. It doesn't matter what</p> <p>6 percentage to me, if any of it does. I'm</p> <p>7 telling you the reports that I've seen, 60</p> <p>8 percent in the testing that I've seen. I</p> <p>9 don't care if that's -- if you took all baby</p> <p>10 powder and it's 60 percent or not. If</p> <p>11 there's any in there, it's a concern to me.</p> <p>12 Q. Okay. So I understand you to</p> <p>13 have an opinion there is asbestos in some</p> <p>14 amount of baby powder, correct?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. In the testing that I've seen,</p> <p>18 yes, I believe there's asbestos in some baby</p> <p>19 powder.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. Okay. And you're talking about</p> <p>22 Dr. Longo's litigation testing, right?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form.</p>	<p>1 microscopist?</p> <p>2 MS. O'DELL: Object to the</p> <p>3 form.</p> <p>4 A. See, when you say</p> <p>5 "microscopist," I say that that -- that's a</p> <p>6 term to me that means more than I think</p> <p>7 you're meaning to say. I routinely look at</p> <p>8 light microscopy, a pathology of gynecologic</p> <p>9 cancers. So in that area, would you say I'm</p> <p>10 a microscopist? I don't know. Do I</p> <p>11 routinely look for asbestos? I do not.</p> <p>12 BY MS. BROWN:</p> <p>13 Q. Right. You don't hold yourself</p> <p>14 out to the medical community as someone who</p> <p>15 is qualified to look at bulk samples of baby</p> <p>16 powder for the presence of asbestos. True?</p> <p>17 A. I do not.</p> <p>18 Q. You have never used a</p> <p>19 transmission electron microscope. True?</p> <p>20 A. I might have used one when I</p> <p>21 was in medical school or a fellowship.</p> <p>22 Q. It's not a regular part of your</p> <p>23 practice to use TEM or SEM electron</p> <p>24 microscopes. True?</p>

34 (Pages 130 to 133)

Judith K. Wolf, M.D.

Page 134	Page 136
<p>1 A. It's not.</p> <p>2 Q. Okay. We're going to have to</p> <p>3 change the tape in a few minutes, but you</p> <p>4 hold the opinion, do you not, Doctor, that</p> <p>5 baby powder is contaminated with asbestos?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form, asked and answered.</p> <p>8 A. I believe that some baby powder</p> <p>9 contains asbestos.</p> <p>10 BY MS. BROWN:</p> <p>11 Q. Do you believe that to be true</p> <p>12 in terms of current baby powder on the shelf?</p> <p>13 A. The testing that I've seen goes</p> <p>14 up through the 1990s. So that's all I can</p> <p>15 speak to.</p> <p>16 Q. Okay. You're not offering an</p> <p>17 opinion that any baby powder after the 1990s</p> <p>18 contains asbestos; is that right?</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 A. I'm not offering any opinion</p> <p>22 about what's in baby powder tests beyond</p> <p>23 where I've seen testing of it.</p> <p>24</p>	<p>1 you're asking me? I don't know -- I don't</p> <p>2 have that information.</p> <p>3 BY MS. BROWN:</p> <p>4 Q. Have you reviewed Dr. Longo's</p> <p>5 report on the samples he acquired, in part,</p> <p>6 from eBay?</p> <p>7 A. I'm laughing at eBay.</p> <p>8 Q. I know. It sounds funny,</p> <p>9 doesn't it?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. I believe there was some</p> <p>13 commercial -- commercial products. I didn't</p> <p>14 know it was eBay. But commercial product</p> <p>15 that was off the shelf.</p> <p>16 BY MS. BROWN:</p> <p>17 Q. Did you review and are you</p> <p>18 relying on Dr. Longo's report of vintage baby</p> <p>19 powder bottles that he purchased on eBay?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 A. I'm just looking for his</p> <p>23 sources.</p> <p>24 (Witness reviews document.)</p>
Page 135	Page 137
<p>1 BY MS. BROWN:</p> <p>2 Q. And the testing that you've</p> <p>3 seen is in the form of Dr. Longo's report.</p> <p>4 True?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. Where did Dr. Longo get</p> <p>7 the samples that he tested; do you know?</p> <p>8 A. I thought that some of them --</p> <p>9 I'll have to look here again. From J&amp;J.</p> <p>10 Q. Did you review, Doctor -- and</p> <p>11 when you say "J&amp;J," do you mean the samples</p> <p>12 that came through warehouses and were</p> <p>13 archived in the J&amp;J "museum"?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form, misstates the record.</p> <p>16 BY MS. BROWN:</p> <p>17 Q. Well, that's a good point.</p> <p>18 MS. O'DELL: Testify to what</p> <p>19 you've seen, Doctor.</p> <p>20 A. What I see is the source of the</p> <p>21 talcum powder for these J&amp;J historical</p> <p>22 samples came from Italian Vermont talc mines.</p> <p>23 So they were J&amp;J historical powder samples.</p> <p>24 Where they were stored at J&amp;J -- is that what</p>	<p>1 A. When I looked in this report</p> <p>2 for where -- the materials and methods, I</p> <p>3 don't see anything about eBay on here.</p> <p>4 BY MS. BROWN:</p> <p>5 Q. Did the lawyers for plaintiffs</p> <p>6 give you Dr. Longo's prior reports?</p> <p>7 A. Yes, they're here somewhere.</p> <p>8 BY MS. BROWN:</p> <p>9 Q. And I don't mean to have you</p> <p>10 have to do homework here, Dr. Wolf. I just</p> <p>11 want to know if you're relying on Dr. Longo's</p> <p>12 testing of the eBay samples.</p> <p>13 MS. O'DELL: Object to the</p> <p>14 form.</p> <p>15 A. I'm relying on whole -- the</p> <p>16 whole of Dr. Longo's testing.</p> <p>17 BY MS. BROWN:</p> <p>18 Q. Okay. And explain to us how</p> <p>19 you employed your methodology of the weight</p> <p>20 of the evidence to evaluate Dr. Longo's</p> <p>21 findings, the FDA's findings, third-party</p> <p>22 institution findings?</p> <p>23 MS. O'DELL: Objection to the</p> <p>24 question, vague and unclear.</p>

35 (Pages 134 to 137)



Judith K. Wolf, M.D.

Page 138	Page 140
<p>1 THE WITNESS: Am I to answer or</p> <p>2 not answer?</p> <p>3 MS. O'DELL: If you understand</p> <p>4 the question. If you don't understand</p> <p>5 the question, you may ask that it be</p> <p>6 rephrased.</p> <p>7 A. Can you rephrase the question?</p> <p>8 BY MS. BROWN:</p> <p>9 Q. How did you weight the evidence</p> <p>10 contained in Hopkins Exhibit 28 in connection</p> <p>11 with the findings of the FDA?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. I considered the weight of all</p> <p>15 of the evidence in the whole of the risk of</p> <p>16 talcum powder in ovarian cancer. This is a</p> <p>17 small piece of it.</p> <p>18 BY MS. BROWN:</p> <p>19 Q. I want to concentrate just on</p> <p>20 your opinion that there's asbestos in talc.</p> <p>21 And I want to know, did you weight</p> <p>22 Dr. Longo's litigation reports the same as</p> <p>23 the testing by the FDA?</p> <p>24 MS. O'DELL: Object to the form</p>	<p>1 of the documents that are cited in Hopkins'</p> <p>2 Exhibit 28?</p> <p>3 A. No.</p> <p>4 Q. Do you know who created</p> <p>5 Hopkins' Exhibit 28?</p> <p>6 A. Specifically, no.</p> <p>7 Q. Okay. Do you know whether</p> <p>8 these represent final or preliminary test</p> <p>9 results?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. I don't know.</p> <p>13 BY MS. BROWN:</p> <p>14 Q. Do you know whether the entries</p> <p>15 that indicate testing of ore is industrial or</p> <p>16 cosmetic talc ore?</p> <p>17 A. I don't.</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. Other than Hopkins' Exhibit 28,</p> <p>22 Dr. Longo and the two FDA reports we've</p> <p>23 discussed, are you relying on anything else</p> <p>24 to inform your opinion that talcum powder is</p>
Page 139	Page 141
<p>1 of the question, misstates her</p> <p>2 testimony.</p> <p>3 MS. BROWN: It's a question.</p> <p>4 There's no testimony. We've got to go</p> <p>5 off anyway. Let's take a break.</p> <p>6 THE VIDEOGRAPHER: Going off</p> <p>7 the record. The time is 11:18 a.m.</p> <p>8 (Recess taken from 11:18 a.m.</p> <p>9 to 11:27 a.m.)</p> <p>10 THE VIDEOGRAPHER: This marks</p> <p>11 the beginning of disk 2. Back on the</p> <p>12 record. The time is 11:27 a.m.</p> <p>13 BY MS. BROWN:</p> <p>14 Q. Dr. Wolf, before we took a</p> <p>15 break, we were discussing your opinion that</p> <p>16 talcum powder contains asbestos. I</p> <p>17 understand you are relying in part on</p> <p>18 Dr. Longo's reports for that opinion; is that</p> <p>19 true?</p> <p>20 A. Yes.</p> <p>21 Q. You are also relying on the</p> <p>22 Exhibit 28 to Dr. Hopkins' deposition. True?</p> <p>23 A. Yes.</p> <p>24 Q. And were you provided with any</p>	<p>1 contaminated with asbestos?</p> <p>2 A. I also have the deposition of</p> <p>3 Dr. Blount.</p> <p>4 Q. And what in the deposition of</p> <p>5 Dr. Blount informs your opinion that talc is</p> <p>6 contaminated with asbestos?</p> <p>7 A. Let me get it out.</p> <p>8 THE WITNESS: It's probably</p> <p>9 over there. This is not the right</p> <p>10 reference. There it is. Sorry. I</p> <p>11 even had it marked.</p> <p>12 (Witness reviews document.)</p> <p>13 BY MS. BROWN:</p> <p>14 Q. Are you relying in part on</p> <p>15 Dr. Blount's testimony, Dr. Wolf?</p> <p>16 A. Yes.</p> <p>17 Q. Have you reviewed Dr. Blount's</p> <p>18 published articles?</p> <p>19 A. I have one here from 1991.</p> <p>20 Q. Did you review that in forming</p> <p>21 your opinion that talc is contaminated?</p> <p>22 A. I did review it, but I'm going</p> <p>23 to have to look at it here one second.</p> <p>24 (Witness reviews document.)</p>

36 (Pages 138 to 141)

Judith K. Wolf, M.D.

Page 142	Page 144
<p>1 A. And the question is, did I use 2 this -- this -- this article that I have is 3 from 1991. I'm looking at my references. 4 Yes, I did -- did use this. 5 BY MS. BROWN: 6 Q. And when you say "this," is it 7 your testimony that you are relying on the 8 information contained in Blount's 1991 9 article to inform your opinion that talc is 10 contaminated with asbestos? 11 A. I'm relying on all of the -- 12 all of the references that I have in my list. 13 That's one of them. 14 Q. Well, some of these references 15 have nothing to do with Johnson's baby 16 powder, right? 17 A. Yes. The references that 18 specifically are the testing for Johnson's 19 baby powder that I'm relying on for my 20 statement that some baby -- some talcum 21 powder product contains asbestos, are the 22 Hopkins data that I showed you, the Longo 23 testing and the deposition of Dr. Blount. 24 Q. So did you write the paragraph</p>	<p>1 products that are contaminated with asbestos 2 are Johnson &amp; Johnson baby powder products? 3 A. Let me look at one thing and 4 then I'll answer your question. 5 (Witness reviews document.) 6 A. Given that the market of 7 Johnson -- of talcum powder products is -- 8 the majority is Johnson's baby powder and 9 Johnson &amp; Johnson products. I'm assuming 10 that in this, where they've got consumer 11 products, that some of those were Johnson &amp; 12 Johnson. 13 BY MS. BROWN: 14 Q. And you understand that some of 15 the consumer products they tested did not 16 have asbestos? 17 A. Yes. 18 Q. Did you understand that? 19 A. I understand that. 20 Q. Okay. What informs your 21 opinion that the products that were all 22 tested in 1976, in which he found asbestos, 23 were Johnson &amp; Johnson products? 24 MS. O'DELL: Object to the</p>
Page 143	Page 145
<p>1 that cites, for example, Paoletti and Rohl 2 1976? 3 A. Yes. 4 Q. Okay. Why would you include 5 Rohl 1976 as evidence that talcum powder -- 6 Johnson's baby powder is contaminated? 7 A. I'd have to read it again to 8 tell you what specifically I pulled out of 9 there. Would you like me to do that? 10 Q. Let me see if I can ask you 11 some questions and save us some time. The 12 article -- 13 MS. O'DELL: Excuse me. Feel 14 free to turn to it, if you'd like. 15 THE WITNESS: All right. 16 MS. O'DELL: I believe it's in 17 this one. 18 BY MS. BROWN: 19 Q. The article reports on some 20 products tested being contaminated and others 21 not. Do you remember that? 22 A. Yeah. 23 Q. And what information are you 24 relying on to support your opinion that the</p>	<p>1 form. 2 A. That each one specifically that 3 was tested is a Johnson &amp; Johnson product? 4 Is that what you're asking me? 5 BY MS. BROWN: 6 Q. Are you relying on Rohl 1976 to 7 support your opinion that Johnson's baby 8 powder is contaminated with asbestos? 9 A. This was a consumer talcum 10 powder product. The majority of consumer 11 talcum powder product is Johnson &amp; Johnson. 12 I'm assuming that some of this is Johnson &amp; 13 Johnson. Some of it tested positive. That, 14 along with all of the other evidence, leads 15 many to have the opinion that some Johnson &amp; 16 Johnson talcum powder products contain 17 asbestos. 18 Q. You have assumed that some of 19 the positive test results from Rohl 1976 were 20 Johnson &amp; Johnson products; is that right? 21 MS. O'DELL: Object to the 22 form. 23 A. I'm assuming that some of them 24 were.</p>

Judith K. Wolf, M.D.

Page 146	Page 148
<p>1 BY MS. BROWN:</p> <p>2 Q. And other than your assumption,</p> <p>3 are you relying on any other information for</p> <p>4 your -- to support your opinion that Rohl</p> <p>5 1976 tested Johnson baby powder products and</p> <p>6 found asbestos?</p> <p>7 A. The fact that the majority of</p> <p>8 consumer products are made by Johnson &amp;</p> <p>9 Johnson.</p> <p>10 Q. So Dr. Wolf, as I understand</p> <p>11 your methodology, you've made an assumption,</p> <p>12 that because the majority of talcum powder</p> <p>13 products are made by J&amp;J, the positive</p> <p>14 results in the Rohl study must have included</p> <p>15 J&amp;J products?</p> <p>16 A. I used -- I -- what I'm saying</p> <p>17 is that this supports all the other evidence</p> <p>18 that there's been asbestos found in some</p> <p>19 Johnson &amp; Johnson products.</p> <p>20 Q. Right. But my question was a</p> <p>21 little different. You've made an assumption,</p> <p>22 that because J&amp;J sells a lot of talcum powder</p> <p>23 products, they must be one of the positive</p> <p>24 test results in the Rohl 1976 article. True?</p>	<p>1 that -- that the majority of the products are</p> <p>2 Johnson -- sold products -- consumer products</p> <p>3 are Johnson &amp; Johnson, that I -- I do assume</p> <p>4 that some of the ones that were tested in</p> <p>5 this are Johnson &amp; Johnson. I took that</p> <p>6 information and put it with the other</p> <p>7 information to make my conclusion.</p> <p>8 BY MS. BROWN:</p> <p>9 Q. And if you were wrong about</p> <p>10 your assumption regarding Rohl 1976, how</p> <p>11 would that affect your opinion here?</p> <p>12 A. I don't believe it would affect</p> <p>13 my opinion that talcum powder products</p> <p>14 include asbestos. So I don't think it would</p> <p>15 change my opinion.</p> <p>16 Q. So whether Rohl found a</p> <p>17 positive test result for a Johnson &amp; Johnson</p> <p>18 product or not doesn't affect your opinion;</p> <p>19 is that right?</p> <p>20 MS. O'DELL: Objection to the</p> <p>21 form.</p> <p>22 A. My concern is that overall</p> <p>23 multiple testing, over multiple years from</p> <p>24 multiple sites, suggests that some talcum</p>
Page 147	Page 149
<p>1 MS. O'DELL: Object to the</p> <p>2 form, it misstates Dr. Wolf's</p> <p>3 testimony.</p> <p>4 A. I don't believe that's what I</p> <p>5 said. I believe that -- my assumption is</p> <p>6 that some of the powder tested in this is</p> <p>7 Johnson &amp; Johnson product. Some of the</p> <p>8 powder tested in this tested positive for</p> <p>9 asbestos.</p> <p>10 In the other studies some of</p> <p>11 the powder tested, some of which was Johnson</p> <p>12 &amp; Johnson, some of which might be from some</p> <p>13 other company, tested positive, and therefore</p> <p>14 the whole of the evidence, in my belief,</p> <p>15 shows that some Johnson &amp; Johnson product --</p> <p>16 talcum powder products contain asbestos.</p> <p>17 BY MS. BROWN:</p> <p>18 Q. You've made an assumption that</p> <p>19 Johnson &amp; Johnson's baby powder products that</p> <p>20 were tested by Rohl in 1976 contained</p> <p>21 asbestos, correct?</p> <p>22 MS. O'DELL: Object to the</p> <p>23 form.</p> <p>24 A. My answer remains the same</p>	<p>1 powder product contains asbestos.</p> <p>2 BY MS. BROWN:</p> <p>3 Q. Have you formed an opinion</p> <p>4 about what percentage of Johnson &amp; Johnson</p> <p>5 talcum powder product contains asbestos?</p> <p>6 A. I don't care what percentage</p> <p>7 does. If there's any in it, it's too much.</p> <p>8 Q. Okay. But we're going to get</p> <p>9 through this so much faster if you just</p> <p>10 listen to my question. Which was, have you</p> <p>11 formed an opinion about how much of Johnson &amp;</p> <p>12 Johnson's talcum powder products are</p> <p>13 contaminated with asbestos?</p> <p>14 MS. O'DELL: Excuse me,</p> <p>15 Dr. Wolf. Move to strike the</p> <p>16 commentary. You may answer the</p> <p>17 questions in any way you feel</p> <p>18 appropriate, Dr. Wolf. So object to</p> <p>19 the form of the question.</p> <p>20 A. Sorry, you're going to -- what</p> <p>21 your question was again.</p> <p>22 BY MS. BROWN:</p> <p>23 Q. I'll re-ask it, rather than</p> <p>24 have you read the realtime, Doctor. Have you</p>

Page 150	Page 152
<p>1 attempted to quantify or estimate what 2 percentage of Johnson &amp; Johnson powder -- 3 Johnson &amp; Johnson baby powder products are 4 contaminated with asbestos? 5 MS. O'DELL: Object to the 6 form. 7 A. I haven't attempted to quantify 8 what percentage of Johnson &amp; Johnson baby 9 powder products contain asbestos. I hold the 10 opinion that if any of it contains asbestos, 11 it's too much. 12 BY MS. BROWN: 13 Q. Have you formed an opinion 14 about what type of asbestos is contaminating 15 Johnson &amp; Johnson baby powder products? 16 A. It doesn't matter to me. All 17 types of asbestos are carcinogenic. 18 Q. And that wasn't my question. 19 My question was, have you formed an opinion 20 about what type of asbestos is contaminating 21 Johnson &amp; Johnson's baby powder products? 22 MS. O'DELL: Excuse me. Object 23 to the form of the question, asked and 24 answered.</p>	<p>1 dangerous. 2 BY MS. BROWN: 3 Q. And in terms of your 4 methodology for analyzing the epidemiology in 5 this case, have you done that with an 6 assumption that the talcum powder evaluated 7 in the epi contained asbestos? 8 A. That question is not clear to 9 me. Are you -- 10 Q. Let me rephrase. I understand 11 you looked at a number of epi studies in 12 forming your opinion here, correct? 13 A. Yes. 14 Q. Have you made the assumption 15 that the talcum powder that was studied in 16 those epi studies contained asbestos? 17 MS. O'DELL: Object to the 18 form. 19 A. So I'm going to say that when 20 I -- when reviewing all of the studies, I 21 wasn't really thinking specifically about the 22 components of talcum powder product. I was 23 looking at the epidemiology of the findings 24 of talcum powder product and its risk for</p>
Page 151	Page 153
<p>1 A. I'll restate that. Because it 2 doesn't matter to me what -- which type of 3 asbestos might be contained in a sample of 4 Johnson &amp; Johnson's talcum powder product, I 5 don't have any opinion as to what type. 6 BY MS. BROWN: 7 Q. Do you have an opinion as to 8 how much contamination is in each individual 9 bottle of Johnson &amp; Johnson's baby powder? 10 MS. O'DELL: Object to the 11 form. 12 A. Because it doesn't matter to me 13 how much there is, whether it's a small 14 amount, a large amount, a medium amount, my 15 concern is that if there's any in it, it's 16 dangerous; I haven't formed an opinion about 17 how much there is. 18 BY MS. BROWN: 19 Q. Do you believe that there's no 20 amount of asbestos that's safe? 21 MS. O'DELL: Object to the 22 form. 23 A. I believe that any amount of 24 asbestos in talcum powder product is</p>	<p>1 ovarian cancer, and then separately, in 2 investigating and looking at all the 3 components of talcum powder as a way to 4 explain the results of the epidemiology 5 studies. 6 So I'm not -- in the end, as a 7 whole -- it's part of the whole, but 8 specifically looking at the epidemiology 9 studies, that wasn't my biggest concern. My 10 concern was, did the use of genital talcum 11 powder increase the risk of ovarian cancer? 12 BY MS. BROWN: 13 Q. Do you believe that talc that's 14 not contaminated with asbestos can cause 15 ovarian cancer? 16 A. I think of the product as a 17 whole versus separate, and my concern is that 18 in the talcum powder product, whether or not 19 a particular sample has asbestos, yes, there 20 are other things in there that can be 21 carcinogenic and inflammatory and cause 22 ovarian cancer. 23 Q. Do you believe that talcum 24 powder without asbestos causes ovarian</p>

Judith K. Wolf, M.D.

Page 154	Page 156
<p>1 cancer?</p> <p>2 MS. O'DELL: Objection to the</p> <p>3 form.</p> <p>4 A. I believe that asbestos is one</p> <p>5 of the products -- one of the components of</p> <p>6 talcum powder that causes carcinogenesis of</p> <p>7 the ovary or cancer of the ovary, but I think</p> <p>8 that in a specific sample, whether or not</p> <p>9 there's asbestos, there's enough other</p> <p>10 products that can be carcinogenic that, yes,</p> <p>11 I think it's still at risk.</p> <p>12 BY MS. BROWN:</p> <p>13 Q. Okay. Have you reviewed, in</p> <p>14 connection with your opinions, Doctor, IARC's</p> <p>15 review of asbestos?</p> <p>16 A. Yes.</p> <p>17 Q. Do you believe that asbestos is</p> <p>18 a recognized cause of ovarian cancer?</p> <p>19 A. Yes.</p> <p>20 Q. Have you ever diagnosed a</p> <p>21 patient with ovarian cancer caused by</p> <p>22 asbestos?</p> <p>23 A. I have, that I can recall, at</p> <p>24 least one patient.</p>	<p>1 physician when you treated this patient?</p> <p>2 A. At MD Anderson.</p> <p>3 Q. You'd agree that the literature</p> <p>4 that IARC relies upon in finding that</p> <p>5 asbestos can cause ovarian cancer is in the</p> <p>6 occupational context?</p> <p>7 MS. O'DELL: Objection to the</p> <p>8 form.</p> <p>9 A. Yes, I would say that they</p> <p>10 looked at inhalation generally and dermal</p> <p>11 contact, yes.</p> <p>12 BY MS. BROWN:</p> <p>13 Q. And they looked at that in the</p> <p>14 heavy occupational exposure context, correct?</p> <p>15 MS. O'DELL: Objection to the</p> <p>16 form.</p> <p>17 A. You know, I'd have to look at</p> <p>18 the wording in that IARC again to answer that</p> <p>19 question.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. Dr. Wolf, I'll hand -- we'll</p> <p>22 mark as Exhibit 10, IARC's monograph on</p> <p>23 asbestos and ovarian cancer.</p> <p>24</p>
Page 155	Page 157
<p>1 Q. And what was the asbestos</p> <p>2 exposure of this patient encounter?</p> <p>3 A. I don't recall. It was a long</p> <p>4 time ago.</p> <p>5 Q. And you documented in a</p> <p>6 patient's chart that you believed her ovarian</p> <p>7 cancer was caused by asbestos?</p> <p>8 A. I'd have to go back and review</p> <p>9 the chart. I don't think I, personally, put</p> <p>10 that in the chart. I'd have to review the</p> <p>11 chart. It may be in her chart, in the</p> <p>12 pathology report that they saw evidence of</p> <p>13 fibers in the cancer. It might be it was her</p> <p>14 exposure. I just remember one patient where</p> <p>15 I went and reviewed the literature on</p> <p>16 asbestos in ovarian cancer because that was</p> <p>17 the concern.</p> <p>18 Q. Did this patient have</p> <p>19 occupational exposure to asbestos?</p> <p>20 A. I don't recall.</p> <p>21 Q. You --</p> <p>22 A. And I don't have access to her</p> <p>23 medical records.</p> <p>24 Q. Where were you the treating</p>	<p>1 (Deposition Exhibit 10 marked</p> <p>2 for identification.)</p> <p>3 BY MS. BROWN:</p> <p>4 Q. I'll direct your attention to</p> <p>5 page 256. Did you review all of the studies</p> <p>6 in this monograph before forming your</p> <p>7 opinions in this case?</p> <p>8 MS. O'DELL: Do you have a copy</p> <p>9 for me, Counsel?</p> <p>10 A. Are you asking did I separately</p> <p>11 read all of the articles in this monograph?</p> <p>12 BY MS. BROWN:</p> <p>13 Q. Yes.</p> <p>14 A. The references?</p> <p>15 MS. O'DELL: Counsel, excuse</p> <p>16 me. Can I just ask, is this going to</p> <p>17 be Exhibit 10?</p> <p>18 MS. BROWN: No, I marked</p> <p>19 Exhibit 10.</p> <p>20 MS. O'DELL: Okay. This is --</p> <p>21 A. I don't think I reviewed all of</p> <p>22 these articles.</p> <p>23 BY MS. BROWN:</p> <p>24 Q. Do the asbestos studies that</p>

40 (Pages 154 to 157)



Judith K. Wolf, M.D.

Page 158	Page 160
<p>1 IARC relies on in what we've marked as 2 Exhibit 10, inform your opinion in this case? 3 A. My opinion that asbestos causes 4 cancer? 5 Q. Yes. 6 A. It's part of the opinion, yes. 7 Q. What do you rely on to support 8 your opinion that asbestos causes ovarian 9 cancer? 10 A. I would say that this and all 11 of the literature. And some of this 12 literature, I believe, is in my 13 contributing -- contributing materials that I 14 reviewed. The Reid paper, the Langseth 15 paper, the Magnani paper. Just didn't read 16 them all, but all of their references. 17 Q. And you would agree that the 18 studies that IARC reviewed were in the heavy 19 occupational exposure context, correct? 20 MS. O'DELL: Object to the 21 form. 22 A. Occupationally exposed. 23 BY MS. BROWN: 24 Q. Let's look at page 256, the</p>	<p>1 statistically significant increase of ovarian 2 cancer, correct? 3 MS. O'DELL: Object to the 4 form. 5 A. There's an increase, but not a 6 statistically significant increase. 7 BY MS. BROWN: 8 Q. Well, that's an important 9 distinction, isn't it, Doctor? 10 A. So it would be -- it would be 11 stronger evidence if it was statistically 12 significant. I'm not writing it off as not 13 important, because the overall conclusion is 14 that asbestos increases the risk of ovarian 15 cancer. And I certainly wouldn't suggest 16 that anyone expose themselves to asbestos, 17 whether it's an occupational hazard or not, 18 not just for its risk of ovarian cancer, but 19 for the risk of other cancers, lung cancers, 20 pleural cancers, renal cancers. 21 Q. The only studies on which IARC 22 relies to support its conclusion that 23 asbestos causes ovarian cancer that have a 24 statistically significant finding are in the</p>
Page 159	Page 161
<p>1 second column, the first full paragraph. 2 "The Working Group noted that a causal 3 association between exposure to asbestos and 4 cancer of the ovary was clearly established 5 based on five strongly positive cohort 6 mortality studies of women with heavy 7 occupational exposure to asbestos." 8 Right? 9 MS. O'DELL: Object to the 10 form. 11 BY MS. BROWN: 12 Q. That's what IARC concluded, 13 right? 14 MS. O'DELL: Object to the 15 form. 16 A. Well, that's part of the 17 conclusion. The next study shows that women 18 and girls with environmental but not exposure 19 to -- occupational exposure had positive but 20 not a significant increase in ovarian cancer 21 also. 22 BY MS. BROWN: 23 Q. Right. The environmental 24 studies that IARC considered did not show a</p>	<p>1 heavy occupational context, correct? 2 MS. O'DELL: Object to the 3 form. 4 A. In that paragraph, that's what 5 it says. 6 BY MS. BROWN: 7 Q. Do you believe that studies 8 looking at women who are experiencing heavy 9 occupational exposure to asbestos, can be 10 relied on in the cosmetic exposure context? 11 A. Can be relied on -- 12 Q. Do you think that women 13 experiencing heavy occupational exposure to 14 asbestos are exposed to the same amount of 15 asbestos as women using talcum powder 16 perineally? 17 A. I don't know the answer to 18 that. 19 Q. Have you attempted to quantify 20 the difference between heavy occupational 21 asbestos exposure and perineal talc asbestos 22 exposure? 23 MS. O'DELL: Objection to the 24 form.</p>

41 (Pages 158 to 161)



Page 162	Page 164
<p>1 A. I haven't attempted to</p> <p>2 quantify. But if we go back to what I'm</p> <p>3 talking about here is the talcum powder</p> <p>4 product, which I believe some of which</p> <p>5 contains asbestos but also contains fibrous</p> <p>6 talc, heavy metals and fragrances that are</p> <p>7 irritating. So it's hard -- it's apples and</p> <p>8 oranges. It's asbestos occupationally that</p> <p>9 we're saying here. It's a talcum powder</p> <p>10 product of which one of the concerning</p> <p>11 components is asbestos and so it's more than</p> <p>12 just asbestos.</p> <p>13 BY MS. BROWN:</p> <p>14 Q. Are you aware of any scientific</p> <p>15 literature that has attempted to quantify the</p> <p>16 difference in exposure between heavy</p> <p>17 occupational asbestos exposure and cosmetic</p> <p>18 talcum powder use?</p> <p>19 A. Of asbestos specifically, is</p> <p>20 that what you're asking me? What are you</p> <p>21 asking?</p> <p>22 Q. Are you aware of any scientific</p> <p>23 literature that attempts to quantify the</p> <p>24 difference between how much a woman is</p>	<p>1 environmental asbestos. I don't know if</p> <p>2 those women used talcum powder in their</p> <p>3 perineum. But again, talcum powder product</p> <p>4 is more than asbestos.</p> <p>5 BY MS. BROWN:</p> <p>6 Q. Are you relying on the</p> <p>7 nonstatistically significant findings in the</p> <p>8 environmental studies of women exposed to</p> <p>9 asbestos to support your view that cosmetic</p> <p>10 talcum powder exposure causes ovarian cancer?</p> <p>11 MS. O'DELL: Object to the</p> <p>12 form.</p> <p>13 A. I'm relying on the fact that</p> <p>14 asbestos is carcinogenic, fibrous talc is</p> <p>15 carcinogenic, platy talc via IARC is a</p> <p>16 possible carcinogenic, heavy metals, chromium</p> <p>17 and nickel are carcinogenic, cobalt is</p> <p>18 possibly carcinogenic and many of the</p> <p>19 fragrances in talcum powder product are</p> <p>20 irritating, that that combination of product</p> <p>21 causes ovarian cancer in some women and puts</p> <p>22 any woman who uses it on her perineum at</p> <p>23 risk -- increased risk for ovarian cancer.</p> <p>24</p>
Page 163	Page 165
<p>1 exposed -- how much asbestos a woman is</p> <p>2 exposed to in the occupational context versus</p> <p>3 if she uses a cosmetic talcum powder product</p> <p>4 that you believe is contaminated with</p> <p>5 asbestos?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. I'm not aware of any literature</p> <p>9 that specifically would answer that question</p> <p>10 because how much, how often the talcum powder</p> <p>11 is used would have -- would differentiate</p> <p>12 there.</p> <p>13 BY MS. BROWN:</p> <p>14 Q. Are you aware of any scientific</p> <p>15 support that exposure -- nonoccupational</p> <p>16 exposure to asbestos causes ovarian cancer?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form, asked and answered.</p> <p>19 A. So these papers referred here,</p> <p>20 in fact the Reid paper, suggests that in</p> <p>21 nonoccupational exposure, there's an</p> <p>22 increase, although not a statistically</p> <p>23 significant risk of ovarian cancer in women</p> <p>24 exposed to what would be presumed to be</p>	<p>1 BY MS. BROWN:</p> <p>2 Q. Other than the nonstatistically</p> <p>3 significant studies discussed in IARC's</p> <p>4 monograph on asbestos, are you aware of any</p> <p>5 scientific support linking asbestos to</p> <p>6 ovarian cancer outside of the heavy</p> <p>7 occupational context?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form, asked and answered.</p> <p>10 A. I'm going to say I'm not aware</p> <p>11 of that, but it doesn't form my opinion. I'm</p> <p>12 going to go back to -- and I know I keep</p> <p>13 repeating the same thing over again -- it's</p> <p>14 not the asbestos alone. Asbestos is one of</p> <p>15 the -- one of the issues that's a component</p> <p>16 of talcum powder product that I'm concerned</p> <p>17 about, that I believe the combination of all</p> <p>18 of those things can increase the risk of</p> <p>19 ovarian cancer.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. Isn't it important for you to</p> <p>22 know or have established how much asbestos</p> <p>23 you believe is contaminating baby powder</p> <p>24 products before you can make that opinion?</p>

Judith K. Wolf, M.D.

Page 166	Page 168
<p>1 MS. O'DELL: Object to the 2 form. 3 A. To me it is not and that's 4 because if -- if things work in an additive 5 or synergistic way, the amount of asbestos 6 that on its own might increase or not 7 increase the risk of ovarian cancer is 8 separate from the amount of asbestos that in 9 combination with all of the other components 10 might increase the risk of ovarian cancer. 11 BY MS. BROWN: 12 Q. What scientific support do you 13 have for your opinion that asbestos works in 14 an additive way with the other constituents 15 of talcum powder to increase a woman's risk 16 for ovarian cancer? 17 A. I don't know that specifically 18 for asbestos, but I know that in general, 19 cancer doesn't occur because of one thing; it 20 occurs because of multiple things. And that 21 toxins can work in combination and that 22 causes of cancer can work in combination. 23 For instance, the human papilloma virus 24 causes cervical cancer, but if you smoke on</p>	<p>1 know, as far as my understanding, there isn't 2 a study that's taken one out and looked at 3 the difference in carcinogenicity, whether 4 one or the other is not there, but it doesn't 5 matter to me because they're there. Asbestos 6 is carcinogenic. Heavy metals are 7 carcinogenic. Nickel and chromium. Platy 8 talc is possibly carcinogenic. Fibrous talc 9 is asbestos. It's carcinogenic. 10 BY MS. BROWN: 11 Q. Is there a threshold exposure 12 to asbestos in your mind that is needed to 13 cause ovarian cancer? 14 A. Are you asking about asbestos 15 on its own? 16 Q. Asbestos on its own. 17 A. I'm not aware what that 18 threshold is. 19 Q. Have you attempted to survey 20 the literature to see if there is any 21 scientific studies examining whether there is 22 a threshold level of asbestos exposure that 23 causes ovarian cancer? 24 MS. O'DELL: Object to the</p>
Page 167	Page 169
<p>1 top of that, your risk of cervical cancer is 2 greater than if you don't smoke. 3 So things can be additive and 4 are synergistic. I don't know if these are 5 additive and/or synergistic. My concern is 6 that they're all toxic and more than likely, 7 I suspect, there are some additivity plus or 8 minus synergism. 9 Q. So if I understand you, 10 Dr. Wolf, you have an understanding generally 11 that multiple factors can work together to 12 cause cancer; is that fair? 13 A. That's correct. 14 MS. O'DELL: Object to form. 15 BY MS. BROWN: 16 Q. As it relates to whether or not 17 multiple elements of a talcum powder product 18 work together to form -- to increase a 19 woman's risk of cancer, you're not aware of 20 any scientific support for that opinion. 21 True? 22 MS. O'DELL: Object to the 23 form. 24 A. I'm not aware of -- as far as I</p>	<p>1 form. 2 A. Hold on one second. Because 3 I'm looking on my papers about an asbestos 4 exposure, but those are not human studies. 5 So my -- my brain says how I would test that, 6 would be to give humans varying amounts of 7 asbestos knowing what you're giving them and 8 seeing who got cancer or not, and that study 9 hasn't been done and can't be done. 10 BY MS. BROWN: 11 Q. And other than kind of your gut 12 or your understanding about how cancer works, 13 is there anything else you're relying on in 14 the scientific literature to support this 15 idea that asbestos is working in combination 16 with something else in talcum powder to 17 increase a woman's risk for ovarian cancer? 18 MS. O'DELL: Object to the 19 form. 20 A. So I'm going to step back and 21 say that my point is that all of those 22 components are toxic in talcum powder. How 23 much asbestos is in there on its own doesn't 24 matter to me because if it's in there and</p>

43 (Pages 166 to 169)

Judith K. Wolf, M.D.

Page 170	Page 172
<p>1 this is in there and this is in there and 2 this is in there, and what I mean is fibrous 3 talc, platy talc, heavy metal, irritating 4 fragrances, it doesn't matter to me how much 5 asbestos is in there. If there's a sample of 6 baby powder that doesn't have asbestos in 7 there, it doesn't matter, because all of 8 those other things also are carcinogenic or 9 possibly carcinogenic or irritating and 10 inflammatory. 11 BY MS. BROWN: 12 Q. So in forming your opinions in 13 this case, Dr. Wolf, it is not important to 14 you to know the chemical composition of an 15 individual bottle of talcum powder; is that 16 right? 17 MS. O'DELL: Object to the 18 form. 19 A. In women who use talcum powder 20 on their perineum, if they're using it 21 regularly, whatever -- however that is 22 defined as once a day, once a week, twice a 23 day, over a period of years they're going to 24 be exposed to more than one bottle of baby --</p>	<p>1 you're going to change your testimony from 2 earlier this morning? 3 MS. O'DELL: Object to the 4 commentary. She's not changing her 5 testimony. She's referred to 6 Dr. Crowley numerous times in her 7 deposition thus far. 8 BY MS. BROWN: 9 Q. Dr. Wolf, you remember telling 10 me this morning you didn't look at anybody's 11 expert report before you wrote yours, right? 12 A. Yes. But I was incorrect, and 13 I'm clarifying it now, because I did see 14 Dr. Crowley's report and I did see 15 Dr. Longo's report. 16 Q. Did you rely on Dr. Crowley's 17 report in forming the opinions in your 18 report? 19 A. About the fragrances, yes. 20 Q. When did you see Dr. Crowley's 21 report? 22 A. Sometime before I turned my 23 report in so that I had time to review it. 24 Q. Did you see a draft version of</p>
Page 171	Page 173
<p>1 of talcum powder product. And so whether one 2 of those bottles did or did not have asbestos 3 in it doesn't matter to me. 4 BY MS. BROWN: 5 Q. Because in your view, there are 6 other things in talcum powder that cause 7 cancer? 8 A. Because there are other things 9 in talcum powder that are carcinogenic or 10 possibly carcinogenic, and if a woman has 11 used more than one bottle over her lifetime, 12 the chances are pretty high that one of those 13 bottles did contain asbestos in addition to 14 the others. 15 Q. Is it your opinion that the 16 fragrances in Johnson &amp; Johnson's baby powder 17 cause ovarian cancer? 18 A. No, I never stated that. It's 19 my opinion that some of them are known 20 irritants or can be inflammatory, and that 21 was from Dr. Crowley's report, which I did 22 see before I wrote my report, his expert 23 report. 24 Q. Time-out. Time-out. Are we --</p>	<p>1 Dr. Crowley's report? 2 A. I think I saw his final report. 3 Q. How many days did you spend 4 reviewing Dr. Crowley's report? 5 MS. O'DELL: Object to the 6 form. 7 A. I don't recall. 8 BY MS. BROWN: 9 Q. What information did you use or 10 rely on from Dr. Crowley's report? 11 A. I can pull it up, but I believe 12 you have a list of all of the things that 13 were in there and looking at them, what they 14 were -- what was known about all of the 15 different components. 16 Q. Did you do anything to verify 17 the accuracy of Dr. Crowley's list of 18 components of talcum powder? 19 MS. O'DELL: Object to the 20 form. 21 A. Such as? What are you 22 suggesting? 23 BY MS. BROWN: 24 Q. Did you do anything, as an</p>

44 (Pages 170 to 173)

<p>Page 174</p> <p>1 independent expert witness, to check the list</p> <p>2 that you received from Dr. Crowley?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 A. I don't know how I could have</p> <p>6 done that because I didn't have the list of</p> <p>7 what was in there myself. And I don't --</p> <p>8 so -- and I don't do the testing myself. I</p> <p>9 relied on the expert, that he tested and</p> <p>10 found those things in the report, in the</p> <p>11 fragrance -- or in the product, sorry.</p> <p>12 BY MS. BROWN:</p> <p>13 Q. And is it your opinion that</p> <p>14 some of the elements on Dr. Crowley's list</p> <p>15 increase a woman's risk of ovarian cancer?</p> <p>16 A. No. It's my opinion that some</p> <p>17 of the ingredients on the list are</p> <p>18 inflammatory. And I know that inflammation</p> <p>19 plays a role in the development and</p> <p>20 progression of ovarian cancer.</p> <p>21 Q. Are you relying on any</p> <p>22 scientific literature to support your</p> <p>23 opinion, that some of the chemicals in</p> <p>24 Johnson &amp; Johnson's baby powder cause an</p>	<p>Page 176</p> <p>1 Dr. Crowley's list, are you relying on the</p> <p>2 presence of those in the baby powder product</p> <p>3 to support your opinion that it increases a</p> <p>4 woman's risk of ovarian cancer?</p> <p>5 A. I believe it's one of the</p> <p>6 things that could.</p> <p>7 Q. So what I want to know is what</p> <p>8 ingredients do you believe could increase a</p> <p>9 woman's risk of ovarian cancer, and then,</p> <p>10 two, what scientific support you have for</p> <p>11 that?</p> <p>12 MS. O'DELL: Excuse me. Object</p> <p>13 to the form.</p> <p>14 A. I never said that those</p> <p>15 ingredients themselves could increase the</p> <p>16 risk of ovarian cancer. What I'm saying is</p> <p>17 that some of the ingredients can be</p> <p>18 inflammatory. Inflammation is associated</p> <p>19 with development and progression of ovarian</p> <p>20 cancer. Those fragrances on their own --</p> <p>21 excuse me, in conjunction with all of the</p> <p>22 other components of talcum powder are</p> <p>23 concerning to me.</p> <p>24</p>
<p>Page 175</p> <p>1 inflammatory reaction that can lead to</p> <p>2 cancer?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 A. I'm relying on the literature</p> <p>6 that says ovarian cancer is related to</p> <p>7 inflammation, both development and</p> <p>8 progression, and knowing that those are</p> <p>9 inflammatory, I have a concern about them.</p> <p>10 BY MS. BROWN:</p> <p>11 Q. Do you have any scientific</p> <p>12 support that the chemicals in Johnson &amp;</p> <p>13 Johnson's baby powder are inflammatory in</p> <p>14 human beings?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. I'd have to look at the report</p> <p>18 of how they were all tested. I know that --</p> <p>19 I'm assuming most of it was in animals, not</p> <p>20 in humans. So I'd have to look at the</p> <p>21 report.</p> <p>22 BY MS. BROWN:</p> <p>23 Q. Are you relying on the presence</p> <p>24 of certain of the chemicals listed on</p>	<p>Page 177</p> <p>1 BY MS. BROWN:</p> <p>2 Q. And what support do you have in</p> <p>3 the scientific literature that would lead you</p> <p>4 to be concerned about the inflammatory</p> <p>5 process you just described?</p> <p>6 A. Oh, in ovarian cancer?</p> <p>7 Q. No, with these chemicals, what</p> <p>8 support do you have -- the list of</p> <p>9 fragrances, what support do you have that</p> <p>10 those elements cause inflammation that could</p> <p>11 lead to cancer in humans?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. I never said I had that</p> <p>15 evidence. What I'm saying, is that the</p> <p>16 expert report says that many of them are</p> <p>17 inflammatory and that I know that</p> <p>18 inflammation has -- plays a large role in</p> <p>19 ovarian cancer and there's more and more</p> <p>20 papers suggesting that, and that this is one</p> <p>21 of the components of talcum powder product</p> <p>22 that I'm concerned about.</p> <p>23 BY MS. BROWN:</p> <p>24 Q. And do you have any evidence</p>

<p style="text-align: right;">Page 178</p> <p>1 that those elements have been tested in human  2 beings, have caused inflammation in human  3 beings?  4 MS. O'DELL: Object to the  5 form.  6 A. I would have to review his  7 report again. My -- so I can't answer that  8 question offhand. I would suspect that most  9 of these were tested in animals, not in human  10 beings.  11 BY MS. BROWN:  12 Q. For purposes of your opinion,  13 Dr. Wolf, are you relying on a finding in  14 animals of inflammation, to support your  15 opinion that talcum powder causes ovarian  16 cancer?  17 MS. O'DELL: Object to the  18 form.  19 A. No. What I'm relying on is --  20 let me clarify it. What I'm relying on is  21 that these cause inflammation, even if it's  22 in animals. They are part of the talcum  23 powder product and concerning to me, in  24 addition with all of the other parts of</p>	<p style="text-align: right;">Page 180</p> <p>1 of ovarian cancer.  2 BY MS. BROWN:  3 Q. Other than your understanding  4 that some of the fragrances have been  5 inflammatory in animals, is there anything  6 else you're relying on to support your  7 opinion, that the presence of the fragrances  8 in Johnson &amp; Johnson's baby powder increase a  9 woman's risk of ovarian cancer?  10 MS. O'DELL: Object to the  11 form.  12 A. I'm just reading the question  13 again. The fact that I know that  14 inflammation in a proinflammatory state is  15 related to the development of ovarian cancer  16 and the progression of ovarian cancer, I'm  17 concerned about anything in talcum powder  18 product that would increase -- potentially  19 increase inflammation.  20 BY MS. BROWN:  21 Q. How -- have you made a  22 determination of how much of the fragrances  23 are present in the talcum powder product?  24 A. I do not know that.</p>
<p style="text-align: right;">Page 179</p> <p>1 talcum powder that are concerning, asbestos,  2 fibrous talc, platy talc, heavy metals.  3 BY MS. BROWN:  4 Q. What support do you have that  5 the inflammation you're referring to leads to  6 cancer?  7 MS. O'DELL: Object to the  8 form.  9 BY MS. BROWN:  10 Q. What I'm after is, where are  11 the scientific studies that say this  12 inflammation in an animal caused cancer, of  13 the list of fragrances Dr. Crowley opines on?  14 MS. O'DELL: Object to the  15 form, asked and answered.  16 A. Yeah, I believe I've already  17 answered that question. I don't have a study  18 that I can point to that says, using this  19 agent it produced cancer, in this agent that  20 it produced cancer. But if they're  21 inflammatory, that's concerning enough to me,  22 especially with ovarian cancer, that they  23 could play a role in the toxicity of talcum  24 powder on the perineum to increase the risk</p>	<p style="text-align: right;">Page 181</p> <p>1 Q. Isn't it important for you in  2 forming your opinion, to know the amount of  3 exposure that a woman would get from  4 fragrances in talcum powder?  5 MS. O'DELL: Object to form.  6 A. I'm going to go back to what I  7 said about asbestos and the amount. First of  8 all, I don't know how you would quantify the  9 amount when I don't know what a dose is, how  10 often someone uses it, how much they use, how  11 long they used talcum powder product. And  12 then in addition, each individual woman, her  13 makeup, her response is going to be  14 different.  15 And so given that there isn't  16 testing of dosing to see if each of these  17 individual things increases the risk of  18 ovarian cancer and there's some concern that  19 they increase inflammation, my concern is  20 that any amount is worrisome.  21 BY MS. BROWN:  22 Q. And the basis for your opinion  23 that it's worrisome is your understanding  24 that in some dose, these chemicals can cause</p>



<p style="text-align: right;">Page 182</p> <p>1 inflammation in animal models. True?</p> <p>2 MS. O'DELL: Object to the</p> <p>3 form.</p> <p>4 A. And more than that, that</p> <p>5 inflammation can cause -- be one of the</p> <p>6 causes of ovarian cancer and this is</p> <p>7 something that's in a product that has</p> <p>8 multiple things that have been associated</p> <p>9 with increased inflammation and/or</p> <p>10 carcinogenicity of the ovaries.</p> <p>11 BY MS. BROWN:</p> <p>12 Q. And tell me, Doctor, I</p> <p>13 understand you believe that there is asbestos</p> <p>14 in baby powder, right, we talked about that?</p> <p>15 A. I have seen data to support</p> <p>16 that there is asbestos in some baby powder</p> <p>17 product.</p> <p>18 Q. And you have not made a</p> <p>19 determination as to how much may be in baby</p> <p>20 powder, correct? How much asbestos?</p> <p>21 MS. O'DELL: Objection to the</p> <p>22 form --</p> <p>23 A. My concern is that I don't -- I</p> <p>24 don't know specifically how much, and I don't</p>	<p style="text-align: right;">Page 184</p> <p>1 form.</p> <p>2 A. I believe I've answered this</p> <p>3 question multiple times, that these fragrance</p> <p>4 ingredients, some of them cause inflammation,</p> <p>5 at least in animals, that ovarian cancer, one</p> <p>6 of the causes, is a proinflammatory state and</p> <p>7 inflammation can also enhance the progression</p> <p>8 of ovarian cancer. And so if there's a</p> <p>9 product that I know contains -- one of the</p> <p>10 components can cause inflammation, and I</p> <p>11 don't know what level is safe, I don't know</p> <p>12 that I can answer that there's a safe level.</p> <p>13 BY MS. BROWN:</p> <p>14 Q. Are you familiar with talc</p> <p>15 pleurodesis?</p> <p>16 A. Yes.</p> <p>17 Q. You understand that that is a</p> <p>18 procedure in which talc is placed inside a</p> <p>19 person's lung for its inflammatory response,</p> <p>20 correct?</p> <p>21 A. So it's not placed in the lung.</p> <p>22 It's placed in the pleura.</p> <p>23 Q. Pleura. Right?</p> <p>24 A. Yes.</p>
<p style="text-align: right;">Page 183</p> <p>1 really have a threshold of how much is safe.</p> <p>2 I'm concerned with any.</p> <p>3 BY MS. BROWN:</p> <p>4 Q. And you've not made a</p> <p>5 determination as to how much fragrance is in</p> <p>6 any individual bottle of baby powder,</p> <p>7 correct?</p> <p>8 A. Well, an individual fragrance,</p> <p>9 no, I don't know.</p> <p>10 Q. Is it your testimony that any</p> <p>11 amount, including trace levels of fragrances,</p> <p>12 can cause inflammation that lead to cancer?</p> <p>13 MS. O'DELL: Objection to the</p> <p>14 form.</p> <p>15 A. I don't know how much of the</p> <p>16 fragrances are required to cause</p> <p>17 inflammation. Given that I don't know how</p> <p>18 much is safe, I'm concerned about any amount.</p> <p>19 BY MS. BROWN:</p> <p>20 Q. But do you have scientific</p> <p>21 support for the fact that any amount of</p> <p>22 fragrance can cause inflammation that leads</p> <p>23 to cancer?</p> <p>24 MS. O'DELL: Object to the</p>	<p style="text-align: right;">Page 185</p> <p>1 Q. And the purpose of placing it</p> <p>2 in the pleura is to initiate an inflammatory</p> <p>3 response, correct?</p> <p>4 A. That's correct.</p> <p>5 Q. And that's, in fact, one of the</p> <p>6 reasons that talc is what's used in</p> <p>7 pleurodesis because it produces in large</p> <p>8 quantities, an inflammatory response, right?</p> <p>9 A. So that is one of the reasons</p> <p>10 that talc has been used. It's not used very</p> <p>11 much anymore because a lot of ovarian cancer</p> <p>12 patients get malignant pleural effusions.</p> <p>13 And so I've had a lot of personal experience</p> <p>14 in -- I'm not doing the pleurodesis myself,</p> <p>15 but referring, and most places for malignant</p> <p>16 pleural effusions these days, they don't use</p> <p>17 any kind of chemical pleurodesis. They put</p> <p>18 in a drain, that the patient can drain as</p> <p>19 needed when they're short of breath.</p> <p>20 Q. You, Doctor, have never</p> <p>21 performed talc pleurodesis; is that right?</p> <p>22 A. I have referred patients to my</p> <p>23 colleagues to do it, but I haven't personally</p> <p>24 done it.</p>



<p style="text-align: right;">Page 186</p> <p>1 Q. Part of your care as a  2 gynecological oncologist includes from time  3 to time referring patients for talc  4 pleurodesis; is that right?  5 MS. O'DELL: Object to the  6 form.  7 A. Referring patients for  8 management of malignant pleural effusion.  9 And I would say that in the last 15, at  10 least, years, none of my patients have had  11 talc pleurodesis or any kind of chemical  12 pleurodesis. They've all had drains placed.  13 BY MS. BROWN:  14 Q. And you're not a pulmonologist,  15 right, Doctor?  16 A. I'm not a pulmonologist.  17 Q. You are not the primary person  18 that patients go to when they're suffering  19 from diseases of the pleura like  20 mesothelioma, correct?  21 MS. O'DELL: Object to the  22 form.  23 A. No.  24</p>	<p style="text-align: right;">Page 188</p> <p>1 that IARC noted is that in -- certainly, talc  2 pleurodesis causes an inflammatory response,  3 right?  4 A. Yes.  5 Q. And that those patients have  6 been followed for decades, to see if that  7 inflammatory response leads to cancer, right?  8 A. Some of those patients.  9 Q. And by and large -- have you  10 reviewed the epidemiology as it relates to  11 patients who have undergone talc pleurodesis?  12 A. Yes.  13 Q. And you would agree with IARC,  14 that the conclusions are that talc  15 pleurodesis does not cause cancer. True?  16 MS. O'DELL: Object to the  17 form.  18 A. So my interpretation of the  19 literature on that, is that it's a -- most of  20 the time it's a one-time application of talc.  21 Many of those patients have a terminal  22 disease and don't live long enough to know  23 what happens down the road. Some of them  24 have been followed a long time, but the talc</p>
<p style="text-align: right;">Page 187</p> <p>1 BY MS. BROWN:  2 Q. And so whether or not talc  3 pleurodesis is and remains the standard of  4 care at a number of institutions treating  5 patients with mesothelioma is not something  6 that you necessarily know; is that fair?  7 MS. O'DELL: Object to the  8 form.  9 A. I would say it's my  10 understanding that in general, talc  11 pleurodesis is not as common as it used to  12 be.  13 BY MS. BROWN:  14 Q. And you would agree with me,  15 Doctor, that talc pleurodesis is something  16 that IARC considered in reviewing the  17 literature on talc, right?  18 MS. O'DELL: Object to the  19 form. Which monograph are you  20 referring to?  21 BY MS. BROWN:  22 Q. On talc.  23 A. Oh, the 2010? Yes.  24 Q. Right. And one of the things</p>	<p style="text-align: right;">Page 189</p> <p>1 pleurodesis, it happens once, maybe twice,  2 but it's not a repeated application of talc.  3 BY MS. BROWN:  4 Q. Have you attempted to quantify  5 the difference between how much talc is  6 applied to the mesothelial cells of the  7 pleura versus how much talc could enter a  8 woman's body from perineal use?  9 MS. O'DELL: Object to the  10 form.  11 A. I haven't done that. I'm not  12 sure how you could do that, unless you  13 measured how much a woman used over time.  14 BY MS. BROWN:  15 Q. You would agree with me that in  16 the pleurodesis context, talc causes an  17 inflammatory response that does not cause  18 cancer, right?  19 MS. O'DELL: Object to the  20 form.  21 A. I would agree that it causes an  22 acute inflammatory response, that's why it's  23 used. And I would say that many of the --  24 much of -- it's given once, and much of the</p>

Judith K. Wolf, M.D.

Page 190	Page 192
<p>1 time we don't know -- the patients don't live</p> <p>2 long enough to know if there's any effect.</p> <p>3 In the patients that have lived long and have</p> <p>4 been followed, there hasn't seen an increase</p> <p>5 risk of cancer, but again, it's a one-time</p> <p>6 application.</p> <p>7 BY MS. BROWN:</p> <p>8 Q. And in terms of how much -- of</p> <p>9 the one-time application, how much talc gets</p> <p>10 into a person's body, that's not something</p> <p>11 you know, right?</p> <p>12 A. No, because I think that if a</p> <p>13 woman's using it, I don't know how much she's</p> <p>14 using over time. And although maybe one time</p> <p>15 using it in the perineum is less than the</p> <p>16 amount used for talc pleurodesis, if somebody</p> <p>17 uses talcum powder product in their peroneum</p> <p>18 daily, monthly, weekly for years, I don't</p> <p>19 know how that relates to what's used in a</p> <p>20 one-time talc pleurodesis.</p> <p>21 Q. Right. You don't have any</p> <p>22 information or any basis to compare the</p> <p>23 amount of talc that's injected into a person</p> <p>24 who's getting talc pleurodesis with the</p>	<p>1 A. I believe that talc, as well as</p> <p>2 many inert materials can migrate to the</p> <p>3 ovaries.</p> <p>4 Q. What other inert materials can</p> <p>5 migrate to the ovaries?</p> <p>6 A. Dead sperm, carbon particles,</p> <p>7 radioactive material that's been studied.</p> <p>8 Q. Are you aware --</p> <p>9 A. Menstrual blood that flows</p> <p>10 retrograde.</p> <p>11 Q. What about particles from the</p> <p>12 exterior of the vagina? Are you aware of any</p> <p>13 evidence that those particles can migrate to</p> <p>14 the ovaries?</p> <p>15 A. So -- I want to say it's in one</p> <p>16 of the animal studies. There is definitely</p> <p>17 inflammation of the genital tract with</p> <p>18 perineal application of rats from talc. It's</p> <p>19 not necessarily a migration study.</p> <p>20 Q. So my question is, do you have</p> <p>21 any scientific support that particles on the</p> <p>22 exterior of the vagina can migrate up the</p> <p>23 genital tract to the ovaries?</p> <p>24 MS. O'DELL: Object to the</p>
Page 191	Page 193
<p>1 amount of talc that may or may not migrate up</p> <p>2 the genital track to the ovaries. True?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 A. What I'm saying is that I can't</p> <p>6 compare the two. It's certainly not bottles</p> <p>7 of talcum powder that -- multiple bottles</p> <p>8 that are used in pleurodesis.</p> <p>9 BY MS. BROWN:</p> <p>10 Q. Do you know how many grams of</p> <p>11 talcum powder are used in talc pleurodesis?</p> <p>12 A. I don't remember offhand.</p> <p>13 Q. Have you attempted to quantify</p> <p>14 how much talcum powder could ascend the</p> <p>15 genital tract through perineal dusting?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 A. Are you asking me have I</p> <p>19 personally done that?</p> <p>20 BY MS. BROWN:</p> <p>21 Q. Well, in connection with your</p> <p>22 opinion -- I assume your opinions in this</p> <p>23 case are based on a belief that talc can</p> <p>24 migrate to the ovaries. True?</p>	<p>1 form.</p> <p>2 A. So I don't know how to say</p> <p>3 this. Because of the position of the</p> <p>4 perineum, because of the opening of the</p> <p>5 vagina, because of the opening of the cervix,</p> <p>6 unless a woman has cervical stenosis, and the</p> <p>7 opening of the fallopian tubes, unless she</p> <p>8 has her tubes tied or removed, it's an open</p> <p>9 tract from the outside up through the vagina</p> <p>10 and to the ovaries in humans. Some animals</p> <p>11 not, but in humans. And it's generally</p> <p>12 accepted in the gynecologic community and by</p> <p>13 the FDA that migration occurs.</p> <p>14 BY MS. BROWN:</p> <p>15 Q. And I understand in connection</p> <p>16 with your report on page 10, you cite to a</p> <p>17 number of studies that support your opinion;</p> <p>18 is that right?</p> <p>19 A. That's correct.</p> <p>20 Q. And none of these studies</p> <p>21 involve studying whether talcum powder</p> <p>22 applied outside of the vagina can travel up</p> <p>23 to the ovaries; is that right?</p> <p>24 A. That's correct, in these</p>

49 (Pages 190 to 193)

<p style="text-align: right;">Page 194</p> <p>1 studies.</p> <p>2 Q. And in fact, none of these</p> <p>3 studies investigate whether any particle</p> <p>4 applied outside of the vagina can travel up</p> <p>5 to the ovaries. True?</p> <p>6 A. Not -- no, that's correct.</p> <p>7 Q. And, in fact, there is no</p> <p>8 evidence in the scientific community at all,</p> <p>9 that would show a talcum powder particle</p> <p>10 outside of the vagina traveling up to the</p> <p>11 ovaries; that investigation has not been</p> <p>12 done, correct?</p> <p>13 MS. O'DELL: Objection to the</p> <p>14 form.</p> <p>15 A. So the studies that I have</p> <p>16 quoted for -- referenced for migration are</p> <p>17 not talcum powder. There are other inert</p> <p>18 substances. The studies on talcum powder</p> <p>19 were not on the perineum in the vagina, but</p> <p>20 there's -- there's no reason to think or</p> <p>21 believe, and from my perspective and from the</p> <p>22 perspective of the gynecologic community,</p> <p>23 that any inert substance couldn't travel from</p> <p>24 the outside up into the ovaries. In fact,</p>	<p style="text-align: right;">Page 196</p> <p>1 MS. O'DELL: Object to the</p> <p>2 form.</p> <p>3 A. So there was a concern for</p> <p>4 that. I think we talked about that earlier.</p> <p>5 BY MS. BROWN:</p> <p>6 Q. I'm talking about the epi that</p> <p>7 looked at women who had used, with their</p> <p>8 partners, talc-dusted condoms and you know</p> <p>9 that epi shows no increased risk of ovarian</p> <p>10 cancer, right?</p> <p>11 MS. O'DELL: Object to the</p> <p>12 form.</p> <p>13 A. So just because those</p> <p>14 studies -- okay. I'm going to say okay, yes.</p> <p>15 BY MS. BROWN:</p> <p>16 Q. How did that body of</p> <p>17 epidemiology, how did you take that into</p> <p>18 account in forming your opinion in this case?</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 A. So I mean, I'm going to say</p> <p>22 that it's a piece of the information, but</p> <p>23 when I look at all of the information as a</p> <p>24 whole, as in epidemiology as far as talcum</p>
<p style="text-align: right;">Page 195</p> <p>1 it's been known for decades, that if a woman</p> <p>2 has that system blocked in some way, if her</p> <p>3 tubes are tied or her tubes are removed or</p> <p>4 she's had a hysterectomy, that reduces her</p> <p>5 risk of ovarian cancer. And before there was</p> <p>6 any hint of what might be coming from the</p> <p>7 outside, the hypothesis in the medical</p> <p>8 community, at least in the gynecologic</p> <p>9 community, is that it's an external substance</p> <p>10 that gets to the ovaries.</p> <p>11 And the fact that that could</p> <p>12 happen is based on the fact that all of these</p> <p>13 other things that are known to travel back</p> <p>14 from the outside. And if something's on the</p> <p>15 outside, it can be pushed up into the inside</p> <p>16 through the vagina by intercourse, by going</p> <p>17 to the bathroom, by wiping, by having --</p> <p>18 riding a bike, by exercising, by walking.</p> <p>19 And I think that's -- that's where I'm going</p> <p>20 to stop.</p> <p>21 BY MS. BROWN:</p> <p>22 Q. And you know that none of the</p> <p>23 talc-dusted condom studies show an increased</p> <p>24 risk of ovarian cancer, right?</p>	<p style="text-align: right;">Page 197</p> <p>1 powder product exposure, the weight of the</p> <p>2 evidence suggests that there is an increased</p> <p>3 risk of ovarian cancer with genital talcum</p> <p>4 powder application.</p> <p>5 BY MS. BROWN:</p> <p>6 Q. Did you -- in considering the</p> <p>7 epidemiology that looked at women whose</p> <p>8 partners had used talc-dusted condoms, did</p> <p>9 you weight that epidemiology differently than</p> <p>10 some of the other studies you considered?</p> <p>11 MS. O'DELL: Object to the</p> <p>12 form.</p> <p>13 A. So I'm going to say that the</p> <p>14 studies I gave the most weight to in the epi</p> <p>15 review, were those that were larger, newer</p> <p>16 meta-analysis or a prospective of the cohort</p> <p>17 studies.</p> <p>18 BY MS. BROWN:</p> <p>19 Q. I think one of the ones you</p> <p>20 pointed us to was Cramer 2016, right?</p> <p>21 A. Yes.</p> <p>22 Q. And you know that -- and how</p> <p>23 did you consider Cramer's findings as it</p> <p>24 related to women who had had tubal ligation?</p>

<p style="text-align: right;">Page 198</p> <p>1 A. So I believe he didn't see a  2 difference. I have to look at the paper  3 again. Some of them they saw a difference if  4 the tubes were tied and some of them they  5 didn't and I can't remember.  6 MS. O'DELL: If you need to  7 take a look at the paper.  8 BY MS. BROWN:  9 Q. Let's take a look at the paper  10 and refresh you on what Dr. Cramer found, and  11 I'll ask you some questions about that.  12 A. 2016. This one.  13 Q. That's going to be this one.  14 Doctor, I want to direct you to page 339, and  15 we'll mark it as an exhibit. This will be  16 Wolf 11, Dr. Cramer's 2016 article. And I  17 think you stated in your report that this was  18 an article that you found to be of  19 particularly high quality; is that right?  20 A. Yes.  21 (Deposition Exhibit 11 marked  22 for identification.)  23 BY MS. BROWN:  24 Q. And what -- what's your</p>	<p style="text-align: right;">Page 200</p> <p>1 A. If I know it. I don't always  2 know.  3 Q. The date of the publication  4 with a preference for more recent studies?  5 A. Yes.  6 Q. Okay. And anything else that  7 went into your determination that  8 Dr. Cramer's 2016 study was high quality?  9 MS. O'DELL: Other than what  10 she said previously.  11 A. And also all of the different  12 potential cofactors that are evaluated.  13 BY MS. BROWN:  14 Q. By "cofactors that are  15 evaluated," do you mean that the author  16 controlled for confounders?  17 A. Or at least looked at other  18 things that might have an impact.  19 Q. And one of the things you know  20 that Dr. Cramer found on page 339, is that  21 there was a statistically significant  22 increased risk in women who had had their  23 tubes tied who had used talcum powder, right?  24 A. (Nods head.)</p>
<p style="text-align: right;">Page 199</p> <p>1 definition of a "high-quality case-control  2 study"?  3 A. So I looked at the size of the  4 study, the -- I was trying to focus on the  5 newer studies just because this would be more  6 related to talcum powder products in the last  7 20 or 30 years. Dr. Cramer has expertise in  8 this area. This is something that he studied  9 before. And he also looked at multiple --  10 multiple -- how often the talc was used and  11 multiple factors that might influence whether  12 there was an impact.  13 Q. So as I understand you,  14 Dr. Wolf, the factors you considered in  15 deeming that a study was, quote/unquote, high  16 quality, include looking at the number of  17 people studied; is that right?  18 A. Uh-huh.  19 Q. The author of the study,  20 correct?  21 A. Uh-huh.  22 Q. The --  23 A. The expertise of the author.  24 Q. The expertise of the author.</p>	<p style="text-align: right;">Page 201</p> <p>1 Q. Do you see that?  2 A. Yes, I see that.  3 Q. Okay. And that's the opposite  4 of what you would expect, based on your  5 opinion and theory. True?  6 MS. O'DELL: Object to the  7 form.  8 A. If we knew when they had their  9 tubes tied. Did they have their tubes tied  10 before they started using talcum powder, or  11 after, or when?  12 BY MS. BROWN:  13 Q. Well, in any event, what you  14 would expect, Doctor, is that the finding in  15 a woman who had her tubes tied should show  16 less of a relative risk than in those who did  17 not have their tubes tied, based on your  18 theory of migration. True?  19 MS. O'DELL: Object to the  20 form.  21 A. Only if those tubes were tied  22 before she was ever exposed to talcum powder  23 product.  24</p>

<p style="text-align: right;">Page 202</p> <p>1 BY MS. BROWN:</p> <p>2 Q. And you know Dr. Cramer did an</p> <p>3 analysis of that as well, right?</p> <p>4 A. I don't know that he was able</p> <p>5 to.</p> <p>6 Q. What he said, as you recall, is</p> <p>7 that the number of women who only used talcum</p> <p>8 powder after their tubes were tied were too</p> <p>9 small to even analyze, right?</p> <p>10 A. That's the answer --</p> <p>11 (Simultaneous discussion</p> <p>12 interrupted by reporter.)</p> <p>13 MS. O'DELL: Give me a chance.</p> <p>14 If you need to look at the paper,</p> <p>15 don't -- don't assume based on what</p> <p>16 the question is.</p> <p>17 (Witness reviews document.)</p> <p>18 BY MS. BROWN:</p> <p>19 Q. Doctor, you would agree that,</p> <p>20 based on your theory of migration, you would</p> <p>21 expect to see a significantly decreased risk</p> <p>22 in women who had a tubal ligation. True?</p> <p>23 MS. O'DELL: Doctor, feel free</p> <p>24 to continue to refresh yourself before</p>	<p style="text-align: right;">Page 204</p> <p>1 MS. O'DELL: Object to the</p> <p>2 form.</p> <p>3 A. I'm not sure. I would -- if</p> <p>4 the only way that they might get cancer from</p> <p>5 an ovary is from migration, yes. Unless</p> <p>6 their tubes weren't adequately tied.</p> <p>7 However, if the talc got to their ovaries</p> <p>8 from another source through inhalation, then</p> <p>9 there may still be some confounding and some</p> <p>10 increased risk.</p> <p>11 BY MS. BROWN:</p> <p>12 Q. Is it your opinion, Doctor,</p> <p>13 that talc can get to a woman's ovaries</p> <p>14 through inhalation?</p> <p>15 A. Yes.</p> <p>16 Q. Have you considered the</p> <p>17 findings of the epidemiology as it relates to</p> <p>18 body-only powder use?</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 A. Yes.</p> <p>22 BY MS. BROWN:</p> <p>23 Q. And what have those studies, by</p> <p>24 and large, shown?</p>
<p style="text-align: right;">Page 203</p> <p>1 you answer any questions.</p> <p>2 A. I just want to read the -- I</p> <p>3 want to look at one more thing and then I'll</p> <p>4 answer your question.</p> <p>5 (Witness reviews document.)</p> <p>6 A. I can't find it in the written</p> <p>7 part of the article.</p> <p>8 BY MS. BROWN:</p> <p>9 Q. Doctor, I'm going to withdraw</p> <p>10 the question because I really do want to move</p> <p>11 on. I understand you want to spend some time</p> <p>12 with the study and we can do that on a break.</p> <p>13 MS. O'DELL: She's about to</p> <p>14 answer your question.</p> <p>15 A. I mean, it basically says that</p> <p>16 he didn't have enough women to be able to</p> <p>17 explain why that was the case.</p> <p>18 BY MS. BROWN:</p> <p>19 Q. Okay. So as a concept, though,</p> <p>20 Doctor, you would expect, based on your</p> <p>21 theory, that the epidemiology would show a</p> <p>22 decreased risk of ovarian cancer with powder</p> <p>23 use in women who have their tubes tied before</p> <p>24 they use the powder use, correct?</p>	<p style="text-align: right;">Page 205</p> <p>1 A. That it's -- that there's no</p> <p>2 carcinogenicity.</p> <p>3 Q. The epidemiology shows, by and</p> <p>4 large, no increased risk of ovarian cancer</p> <p>5 with body-only use of talcum powder, correct?</p> <p>6 A. Yes.</p> <p>7 MS. O'DELL: Object to the</p> <p>8 form.</p> <p>9 BY MS. BROWN:</p> <p>10 Q. How did you consider that</p> <p>11 epidemiology in forming your opinion that a</p> <p>12 woman might be exposed to talcum powder</p> <p>13 through inhalation?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. I'm not sure how those two</p> <p>17 things relate.</p> <p>18 BY MS. BROWN:</p> <p>19 Q. If a woman uses talcum powder</p> <p>20 on her body, how is she exposed to the talcum</p> <p>21 powder?</p> <p>22 A. On her skin. I don't know what</p> <p>23 you're asking me.</p> <p>24 Q. Do you think there's</p>



Page 206	Page 208
<p>1 potential -- more of a potential for a woman</p> <p>2 to be exposed from inhaling talcum powder</p> <p>3 when she puts it in her underwear than if</p> <p>4 she's using it on her chest?</p> <p>5 A. I don't know.</p> <p>6 Q. Have you evaluated how much</p> <p>7 talcum powder a woman using body-use-only</p> <p>8 would be exposed to?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. I know that body-use-only does</p> <p>12 not increase carcinogenicity --</p> <p>13 carcinogenesis, I'm sorry. But I'm not</p> <p>14 ruling out that someone who routinely daily</p> <p>15 uses it on the perineum couldn't also have</p> <p>16 inhalation exposure.</p> <p>17 BY MS. BROWN:</p> <p>18 Q. And what support do you have in</p> <p>19 the scientific literature for that opinion?</p> <p>20 A. I would say the finding of talc</p> <p>21 in lymph nodes is one potential -- pelvic</p> <p>22 lymph nodes near the ovary, although the</p> <p>23 pelvic lymph nodes could also come from the</p> <p>24 ovary in the other direction. I mean,</p>	<p>1 case report, do you have any other support in</p> <p>2 the scientific literature that a woman using</p> <p>3 talcum powder perineally would be exposed via</p> <p>4 inhalation?</p> <p>5 A. Hang on one second.</p> <p>6 (Witness reviews document.)</p> <p>7 A. I'm looking at my report and my</p> <p>8 references, but they don't specifically talk</p> <p>9 about perineal application and inhalation.</p> <p>10 All I'm saying, to answer your first</p> <p>11 question, to go back a few, is that -- your</p> <p>12 question was, if somebody had their tubes</p> <p>13 tied before they ever used talcum powder,</p> <p>14 would that negate any increased risk of</p> <p>15 ovarian cancer? And my answer was, if the</p> <p>16 tubes were tied, it couldn't migrate up, but</p> <p>17 there's still the possibility that she could</p> <p>18 have it from inhalation. That's all I'm</p> <p>19 saying.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. And I want to know what support</p> <p>22 you rely on in forming the opinion that a</p> <p>23 woman could inhale talcum powder that could</p> <p>24 reach her ovaries and cause ovarian cancer?</p>
Page 207	Page 209
<p>1 migration could lead to talc in pelvic lymph</p> <p>2 nodes.</p> <p>3 Q. What you're referring to is a</p> <p>4 case report from 2007 that -- by Dr. Cramer?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. Did you know that</p> <p>7 Dr. Cramer was an expert witness for the</p> <p>8 plaintiffs?</p> <p>9 A. I did.</p> <p>10 Q. Did you consider Dr. Cramer's</p> <p>11 work as an expert witness in evaluating and</p> <p>12 reaching the determination that his 2016</p> <p>13 paper was high quality?</p> <p>14 A. No.</p> <p>15 Q. The fact that Dr. Kramer is</p> <p>16 being paid by plaintiffs' lawyers in talcum</p> <p>17 powder litigation did not affect your</p> <p>18 evaluation of his 2016 article; is that</p> <p>19 right?</p> <p>20 A. No.</p> <p>21 MS. O'DELL: Object to the</p> <p>22 form.</p> <p>23 BY MS. BROWN:</p> <p>24 Q. Other than Dr. Cramer's 2007</p>	<p>1 A. I'm going to talk -- say that</p> <p>2 talcum powder has been found not only in the</p> <p>3 lymph nodes but in the ovaries of women, both</p> <p>4 who report using and not using perineal</p> <p>5 talcum powder.</p> <p>6 Q. So you're talking about the</p> <p>7 Heller study, right?</p> <p>8 A. Yes.</p> <p>9 Q. Okay. How does the fact that</p> <p>10 talcum powder has been potentially found in</p> <p>11 the ovaries of women who did not report using</p> <p>12 talcum powder, support your view that a woman</p> <p>13 could inhale talcum powder from perineal use</p> <p>14 and have that powder reach her ovaries and</p> <p>15 cause cancer?</p> <p>16 A. To me it just supports the idea</p> <p>17 that talcum powder can get to the ovaries</p> <p>18 through inhalation.</p> <p>19 Q. And did you read the findings</p> <p>20 of that study as it related to whether or not</p> <p>21 the talcum powder that was allegedly found in</p> <p>22 the ovary induced an inflammatory response?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form.</p>



Judith K. Wolf, M.D.

Page 210	Page 212
<p>1 A. So sometimes there was an 2 inflammatory response and sometimes not, is 3 my recollection. 4 BY MS. BROWN: 5 Q. Okay. Let's take a look at the 6 paper. 7 A. Okay. 8 MS. O'DELL: We've been going 9 about an hour and a half. It's 12:45. 10 MS. BROWN: If we could finish 11 Heller, then we can take a break. 12 MS. O'DELL: What do you 13 anticipate on Heller? 14 MS. BROWN: Ten minutes. 15 MS. O'DELL: Okay. Is ten 16 minutes okay with you, Doctor? 17 THE WITNESS: Uh-huh. 18 BY MS. BROWN: 19 Q. Thanks, Doctor. 20 A. So it doesn't look like they 21 looked at inflammation. 22 Q. Hold on one second. And one of 23 the things you know that this -- 24 MS. O'DELL: Are you going to</p>	<p>1 response or not. But what I'm going to tell 2 you, I'm reading their entire results. 3 BY MS. BROWN: 4 Q. I promise you I will point it 5 out to you. I don't want to waste time. 6 This is going to be the first thing we do 7 when we come back. 8 Is it your testimony, based on 9 talc causing an inflammatory response, that 10 leads to cancer? 11 A. Yes. 12 Q. And so how -- when talc -- a 13 talc particle is found, would you expect it 14 to show an inflammatory response? 15 A. What I'm trying to say is, that 16 I don't know the timing of the talc being 17 placed and looking at the specimen, was the 18 entire specimen looked at. When you look at 19 pathology slides, you look at a little piece 20 of the tissue. You don't generally look at 21 the entire tissue. And so it could be that 22 the area that was looked at did not show 23 inflammation and in an area that wasn't in 24 the slide did show inflammation.</p>
Page 211	Page 213
<p>1 mark an exhibit? 2 MS. BROWN: Uh-huh. 3 BY MS. BROWN: 4 Q. I'm trying to find it. We'll 5 take a break and I can find it for you, 6 Doctor. But you know that they reported that 7 the talc that was found did not show evidence 8 of a foreign body reaction. Do you remember 9 that? 10 MS. O'DELL: Object to the 11 form. 12 A. That's not anywhere in the 13 results. 14 BY MS. BROWN: 15 Q. I'll show it to you. We'll 16 take a break and I'll show it to you. Would 17 that be important for you to consider? 18 MS. O'DELL: Object to the 19 form. 20 A. I'm going to say not 21 necessarily, because it depends on did they 22 look at the entire ovary, depends on the 23 timing of when they looked at it, whether 24 there's a response -- an inflammatory</p>	<p>1 Q. In your opinion, can talc be in 2 the ovaries and not cause inflammation? 3 A. No, that's not what I'm saying. 4 I'm saying you might not see it if you don't 5 look at the entire specimen, the entire 6 ovary. 7 MS. BROWN: Let's take a break 8 and have lunch and we'll come back and 9 finish Heller, which I will mark. 10 MS. O'DELL: Okay. 11 THE VIDEOGRAPHER: Going off 12 the record. The time is 12:44 p.m. 13 (Recess taken from 12:44 p.m. 14 to 1:41 p.m.) 15 THE VIDEOGRAPHER: Back on the 16 record. The time is 1:41 p.m. 17 (Deposition Exhibit 12 marked 18 for identification.) 19 BY MS. BROWN: 20 Q. Dr. Wolf, I'm handing you what 21 I've marked as Exhibit 12 to your deposition, 22 and which is the article by Heller from 1996 23 that we were discussing before lunch. 24 A. Yes.</p>

54 (Pages 210 to 213)

<p style="text-align: right;">Page 214</p> <p>1 Q. And this is --</p> <p>2 MS. O'DELL: Excuse me, do you</p> <p>3 have a copy for me?</p> <p>4 MS. BROWN: Sorry.</p> <p>5 BY MS. BROWN:</p> <p>6 Q. This is one of the articles</p> <p>7 that you pointed me to in support of your</p> <p>8 opinion that talc particles can migrate to</p> <p>9 the ovaries, correct?</p> <p>10 A. Yes.</p> <p>11 Q. Okay. And you would agree with</p> <p>12 me, though, that this study looked at whether</p> <p>13 or not the talc particles that they allegedly</p> <p>14 found were causing an inflammatory response,</p> <p>15 right?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 A. Well, in -- in reading that</p> <p>19 full paragraph, they looked at one of the</p> <p>20 specimens for an inflammatory response, out</p> <p>21 of 24.</p> <p>22 BY MS. BROWN:</p> <p>23 Q. And the conclusion was that</p> <p>24 there was no evidence of a response to talc,</p>	<p style="text-align: right;">Page 216</p> <p>1 keep moving.</p> <p>2 (Witness reviews document.)</p> <p>3 A. Okay. Sorry, this one does not</p> <p>4 talk -- they don't mention any -- whether</p> <p>5 they even looked for inflammation.</p> <p>6 MS. O'DELL: Dr. Wolf, for the</p> <p>7 record, you were referring to</p> <p>8 Henderson '71?</p> <p>9 THE WITNESS: Yes.</p> <p>10 BY MS. BROWN:</p> <p>11 Q. So to be clear for the record,</p> <p>12 then, Dr. Wolf, in Heller '96 the case that</p> <p>13 they reported on found no evidence of a</p> <p>14 response to talc, correct?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. They looked at one out of 24</p> <p>18 cases and in that one case, they did not see</p> <p>19 a response to talc.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. And you have no evidence that</p> <p>22 there was anything different in the other 23</p> <p>23 cases. True?</p> <p>24 MS. O'DELL: Object to the</p>
<p style="text-align: right;">Page 215</p> <p>1 such as foreign body giant cell reactions or</p> <p>2 fibrosis in the tissue, right?</p> <p>3 A. In one out of 24.</p> <p>4 Q. That wasn't my question. That</p> <p>5 was their finding, right?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. Their finding in one out of 24.</p> <p>9 BY MS. BROWN:</p> <p>10 Q. Do you have evidence that in</p> <p>11 the other 23 they saw evidence of an</p> <p>12 inflammatory reaction to talc?</p> <p>13 A. I don't have any evidence that</p> <p>14 they looked at the other 23.</p> <p>15 Q. Do you have any evidence at all</p> <p>16 that talc found in the ovary produces an</p> <p>17 inflammatory response?</p> <p>18 A. Yes.</p> <p>19 Q. And what's that?</p> <p>20 A. So I'm going to look at --</p> <p>21 THE WITNESS: Can I get</p> <p>22 Henderson? Two thousand -- 1971.</p> <p>23 BY MS. BROWN:</p> <p>24 Q. I have it here. Let's just</p>	<p style="text-align: right;">Page 217</p> <p>1 form.</p> <p>2 A. I don't have any evidence on</p> <p>3 the other 23 cases.</p> <p>4 BY MS. BROWN:</p> <p>5 Q. And in the Henderson article</p> <p>6 that you just pointed us to, there's</p> <p>7 similarly no evidence about whether or not</p> <p>8 there was an inflammatory reaction. True?</p> <p>9 A. It doesn't look like they</p> <p>10 looked.</p> <p>11 Q. And the way we got started</p> <p>12 talking about -- and you would agree, based</p> <p>13 on the pleurodesis studies, that it is</p> <p>14 possible for talc to cause an inflammatory</p> <p>15 reaction that does not lead to cancer. True?</p> <p>16 A. In the talc -- in pleurodesis</p> <p>17 studies, that's an acute reaction. The</p> <p>18 inflammation that is concerning to lead to</p> <p>19 cancer is a chronic reaction, not an acute</p> <p>20 reaction.</p> <p>21 Q. And how -- what do you rely on</p> <p>22 for how much exposure to talc takes someone</p> <p>23 from a chronic in- -- an acute inflammatory</p> <p>24 response to a chronic inflammatory response?</p>

<p style="text-align: right;">Page 218</p> <p>1 MS. O'DELL: Object to the  2 form.  3 A. What do I rely on for how much  4 exposure of talc? Exposure to talc over  5 time, can lead to a chronic response, chronic  6 inflammatory response. If you're looking  7 under the microscope at an ovary or something  8 that has talc in it, in that slide you may or  9 may not see an inflammatory response, either  10 acute or chronic, for several reasons. One,  11 that if the talc has been there a long time,  12 you might be -- not be looking when you see  13 obvious inflammatory response either acute or  14 chronic. The second is that you might not be  15 looking at every part of the specimen, to  16 determine if it's just the section that  17 you're looking at.  18 BY MS. BROWN:  19 Q. Have you attempted to quantify  20 how much exposure over time leads to the  21 chronic inflammation you were just  22 describing?  23 MS. O'DELL: Object to the  24 form.</p>	<p style="text-align: right;">Page 220</p> <p>1 A. I know he was doing some  2 research and I wanted to hear from him about  3 what exactly he was looking at, how he was  4 studying it and what his plans were to try to  5 investigate in an in vitro way, the mechanism  6 by which talc can cause ovarian cancer.  7 Q. Would you agree that the  8 mechanism or the proposed mechanism by which  9 talc can cause ovarian cancer, is not well  10 understood today?  11 MS. O'DELL: Object to the  12 form.  13 A. I would agree that there are  14 several lines of evidence, including all of  15 the body of Dr. Saed's work, as well as  16 Dr. Shukla's paper and Dr. Buz'Zard's paper,  17 that suggest that inflammation plays a role  18 in the carcinogenesis of talcum powder  19 product to cause ovarian cancer. And that  20 the most recent work from Dr. Saed's lab,  21 which he's not the first author but the  22 senior author, shows that there's a dose  23 response for the amount of talc and that it's  24 not just inflammation that secondarily causes</p>
<p style="text-align: right;">Page 219</p> <p>1 A. When I look at the literature  2 as a whole, again, going back to the  3 epidemiology literature that attempted to  4 look at dose response, it seems like the --  5 that several of the studies suggests that  6 more doses, and I'm putting that in quotes  7 because it's not measured, it's not a  8 specific amount, but more exposure increases  9 the risk of ovarian cancer. And so my  10 inference from that, from putting the whole  11 of the literature together, is that the  12 longer -- the more the dose, the more likely  13 the more inflammation and more cell damage,  14 inflammation causing an oxidative response  15 that then can lead down to DNA damage and, in  16 fact, in Saed's most recent abstract genetic  17 changes from talc.  18 BY MS. BROWN:  19 Q. You billed time to the  20 plaintiff's lawyers for speaking to Dr. Saed;  21 is that right?  22 A. Yes.  23 Q. What was the purpose of that  24 conversation?</p>	<p style="text-align: right;">Page 221</p> <p>1 genetic changes, but there's actual genetic  2 changes in the cells that can be  3 carcinogenic.  4 BY MS. BROWN:  5 Q. You testified earlier, I  6 believe, that the opinion that talc particles  7 can migrate to the ovaries is well accepted  8 in the medical community. Do you remember  9 that?  10 A. That migration of inert  11 substances is well accepted in the medical  12 community and, in fact, by the FDA.  13 Q. And would you consider that to  14 include talcum powder?  15 A. I would.  16 Q. And, in fact, you state in your  17 report on page 17, that, "The evidence  18 supporting migration is robust and  19 universally accepted by the gynecologic  20 community."  21 Right?  22 A. Yes.  23 Q. Now, IARC doesn't agree with  24 that, right?</p>

Judith K. Wolf, M.D.

Page 222	Page 224
<p>1 MS. O'DELL: Object to the 2 form. 3 A. So my sentence here says 4 "within the gynecologic community." 5 BY MS. BROWN: 6 Q. Did you mean to exclude the 7 international research on cancer? 8 MS. O'DELL: Object to the 9 form. 10 A. No. I'm saying that my 11 sentence here says it's universally accepted 12 within the gynecologic community. 13 BY MS. BROWN: 14 Q. Were you aware that it's 15 rejected by IARC? 16 MS. O'DELL: Object to the 17 form. 18 A. My understanding is that it's 19 not rejected, that in that report that you're 20 referring to, which I think is the 2010 21 report, that they -- that the evidence that 22 they looked at, they said that it was weak, 23 not rejected. 24</p>	<p>1 BY MS. BROWN: 2 Q. And you would agree with me, 3 Doctor, that all of the information you cite 4 on pages 10 and 11 was available to the 5 International Agency for Research on Cancer 6 in 2010. True? 7 MS. O'DELL: Object to the 8 form. 9 A. I'd have to look at everything 10 that they reviewed to see if they reviewed 11 all of that. 12 BY MS. BROWN: 13 Q. I'm handing you what we've 14 marked as Exhibit 15. 15 (Deposition Exhibit 13 marked 16 for identification.) 17 BY MS. BROWN: 18 Q. And I want to start by 19 directing your attention to page -- 20 MS. BROWN: I'm sorry, we have 21 a copy for you, Counsel. 22 BY MS. BROWN: 23 Q. This is IARC monograph on talc, 24 2010, and I want to start by directing your</p>
Page 223	Page 225
<p>1 BY MS. BROWN: 2 Q. And have you looked at any 3 additional evidence, other than that which 4 IARC considered, which leads you to believe 5 that it's universally accepted? 6 A. I'd have to look at everything 7 that IARC looked at and compare it to what I 8 looked at to say if it's different. 9 Q. Well, what was your methodology 10 in terms of considering the International 11 Agency for Research on Cancer's conclusion 12 that the evidence for migration is weak? 13 MS. O'DELL: Object to the 14 form. 15 A. You know, I -- as I've stated 16 before, I used all of the information as a 17 whole, to determine my opinion and my -- and 18 when I look at the bulk of the evidence and 19 with my experience and with what I know about 20 gynecology, there's multiple lines of 21 evidence that show that migration of inert 22 particles occurs, and that retrograde 23 migration occurs. 24</p>	<p>1 attention to page 33, under the section 2 entitled "Mechanistic and other relevant 3 data." 4 MS. O'DELL: What page? 5 THE WITNESS: Thirty-three. 6 MS. BROWN: Sorry, is that 13? 7 I may have mismarked it. 8 MS. O'DELL: That says that's 9 15. 10 A. 15. 11 MS. BROWN: Should be 13. 12 We'll correct it. 13 A. Do you want it back? 14 BY MS. BROWN: 15 Q. Yeah, sorry. Thank you, 16 Doctor. Handing back to you what is 17 Exhibit 13. 18 MS. BROWN: Thank you, Alexis. 19 BY MS. BROWN: 20 Q. And I want to direct your 21 attention to page 33. And this IARC 22 monograph on talc, nonasbestiform talc, of 23 course, you reviewed in connection with your 24 opinions in this case. True?</p>

57 (Pages 222 to 225)

<p style="text-align: right;">Page 226</p> <p>1 A. Yes.</p> <p>2 Q. Okay. And you are aware that</p> <p>3 IARC considers the strength of the evidence</p> <p>4 as it relates to a proposed mechanism for</p> <p>5 cancer, correct?</p> <p>6 A. Yes.</p> <p>7 Q. Okay. And you see here on</p> <p>8 page 33 that IARC evaluates those, using</p> <p>9 terms such as "weak," "moderate" or "strong,"</p> <p>10 correct?</p> <p>11 A. Yes.</p> <p>12 Q. Okay. And IARC, if you would</p> <p>13 turn to page 411, evaluated the data as it</p> <p>14 relates to migration, right?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 BY MS. BROWN:</p> <p>18 Q. And I'll direct you, excuse me,</p> <p>19 Doctor --</p> <p>20 A. Are you directing me to</p> <p>21 something specific on this page?</p> <p>22 Q. I am.</p> <p>23 A. Okay.</p> <p>24 Q. I'll direct you to the -- one,</p>	<p style="text-align: right;">Page 228</p> <p>1 you employed to arrive at a conclusion that</p> <p>2 is diametrically opposed to the one IARC</p> <p>3 wrote about in 2010?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 A. I don't -- I don't believe it's</p> <p>7 diametrically opposed and I believe that when</p> <p>8 I reviewed all of the evidence and from my</p> <p>9 own knowledge of gynecology and practicing</p> <p>10 and my expertise in the last 30 years and</p> <p>11 seeing multiple patients with endometriosis</p> <p>12 and evidence of retrograde menstruation, that</p> <p>13 my opinion is that migration occurs. And</p> <p>14 that I believe that it's the opinion of the</p> <p>15 general gynecology community that migration</p> <p>16 does occur. And another reputable</p> <p>17 institution is the FDA, who says that the</p> <p>18 ability for particulates to migrate is</p> <p>19 indisputable.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. And what you're referring to is</p> <p>22 the 2014 citizen's petition, right?</p> <p>23 A. Yes.</p> <p>24 Q. And do you find that to be a</p>
<p style="text-align: right;">Page 227</p> <p>1 two, three -- fourth paragraph that begins</p> <p>2 with "Perineal exposure."</p> <p>3 A. Okay.</p> <p>4 Q. And you see that IARC reports</p> <p>5 on its review of the studies on potential</p> <p>6 migration. True?</p> <p>7 A. Yes.</p> <p>8 Q. And on balance, what the IARC</p> <p>9 working group concluded was that the evidence</p> <p>10 for retrograde transport of talc to the</p> <p>11 ovaries in normal women is weak, right?</p> <p>12 A. Yes.</p> <p>13 Q. And that is their lowest</p> <p>14 classification of mechanistic evidence,</p> <p>15 correct?</p> <p>16 A. Yes.</p> <p>17 Q. And you believe IARC is a</p> <p>18 reputable international health agency, right?</p> <p>19 A. Yes.</p> <p>20 Q. And so you considered its</p> <p>21 conclusion, that the evidence for retrograde</p> <p>22 migration is weak, right?</p> <p>23 A. I did.</p> <p>24 Q. And so tell me what methodology</p>	<p style="text-align: right;">Page 229</p> <p>1 reliable authority on the review of the</p> <p>2 literature regarding talc and ovarian cancer?</p> <p>3 A. This is not regarding --</p> <p>4 necessarily regarding talc and ovarian</p> <p>5 cancer. It's the idea that things can</p> <p>6 migrate from the perineum through the genital</p> <p>7 tract. That's what I based my opinion on</p> <p>8 that.</p> <p>9 Q. We're talking about two</p> <p>10 different things. You just referenced the</p> <p>11 2014 response to a citizen's petition, right?</p> <p>12 A. Yes.</p> <p>13 Q. And do you -- and in that</p> <p>14 response, the FDA went through its review of</p> <p>15 the literature on talc and ovarian cancer,</p> <p>16 correct?</p> <p>17 A. Yes.</p> <p>18 Q. And do you regard that as</p> <p>19 authoritative and reputable?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 A. Yes.</p> <p>23 BY MS. BROWN:</p> <p>24 Q. Okay. And one of the things</p>

Judith K. Wolf, M.D.

<p style="text-align: right;">Page 230</p> <p>1 you're pointing to, is the FDA's statement  2 that particles can migrate from the perineum  3 in the vagina to the peritoneal cavity,  4 correct?  5 A. That's correct.  6 Q. And the FDA, of course, doesn't  7 cite to any evidence that talc can migrate  8 from the exterior of the vagina to the  9 ovaries, correct?  10 MS. O'DELL: Object to the  11 form. If you're pointing -- going to  12 point Dr. Wolf to a particular part of  13 the letter, then I would ask you to  14 show it to her.  15 MS. BROWN: Absolutely.  16 MS. O'DELL: So if you need to  17 see the letter --  18 A. Yeah, let me see the letter.  19 MS. O'DELL: -- to respond to  20 the question, please ask for it.  21 BY MS. BROWN:  22 Q. I'm going to show you the  23 letter and I want to talk about it, but you  24 raised the statement about the particles,</p>	<p style="text-align: right;">Page 232</p> <p>1 response to the citizen's petition by the FDA  2 in 2014?  3 A. I'm sure I did.  4 Q. And, in fact, as support for  5 your opinion that talc applied on the  6 exterior of the vagina can migrate to the  7 ovaries, you referenced a sentence from that  8 letter, right?  9 A. That's correct.  10 Q. Okay. But we agree that the  11 FDA was talking about particles generally,  12 correct?  13 MS. O'DELL: Object to the  14 form.  15 A. The FDA was talking about  16 particulates in general.  17 BY MS. BROWN:  18 Q. Okay. And did you review, and  19 I'll hand you what we've marked as  20 Exhibit 14, the entirety of what the FDA had  21 to say about the epidemiology and the  22 evidence as it relates to talc and ovarian  23 cancer?  24</p>
<p style="text-align: right;">Page 231</p> <p>1 right?  2 MS. O'DELL: She did. But she  3 doesn't have to answer questions about  4 the letter aside from what she said.  5 MS. BROWN: I'm not talking --  6 MS. O'DELL: If you want to ask  7 specific questions about the letter --  8 MS. BROWN: I'm going to show  9 her the letter.  10 MS. O'DELL: Then show her the  11 letter.  12 MS. BROWN: Okay. But I can  13 ask lead-up questions about the  14 letter.  15 MS. O'DELL: Right.  16 MS. BROWN: It doesn't have  17 to --  18 MS. O'DELL: Let me finish. In  19 order to answer any of the questions,  20 counsel asked if you need the letter,  21 please ask for it and I'm sure she'll  22 provide it to you.  23 BY MS. BROWN:  24 Q. Dr. Wolf, did you review the</p>	<p style="text-align: right;">Page 233</p> <p>1 (Deposition Exhibit 14 marked  2 for identification.)  3 MS. O'DELL: Object to the  4 form.  5 (Witness reviews document.)  6 A. You asked me if I reviewed the  7 entire thing as to their opinion. And the  8 answer is yes. And what did you --  9 BY MS. BROWN:  10 Q. That was the only question.  11 A. That was the only question.  12 Q. All right. And you'll agree on  13 the first page, third paragraph, the FDA  14 concludes that it did not find that the data  15 submitted presented conclusive evidence of a  16 causal association between talc used in the  17 perineal area and ovarian cancer, right?  18 MS. O'DELL: Object to the  19 form.  20 BY MS. BROWN:  21 Q. That's what the FDA said?  22 A. That's what the letter says.  23 Q. That was the FDA's sentence in  24 a letter to the Cancer Prevention Coalition</p>



<p style="text-align: right;">Page 234</p> <p>1 in April of 2014, correct?</p> <p>2 A. Yes.</p> <p>3 Q. And you, Dr. Wolf, disagree</p> <p>4 with that. True?</p> <p>5 A. I do.</p> <p>6 Q. Okay. And so what methodology</p> <p>7 did you employ to distinguish your review of</p> <p>8 the literature from the Food and Drug</p> <p>9 Administration's review?</p> <p>10 A. The first thing is, is that I</p> <p>11 have more literature to support my opinion</p> <p>12 that was not yet available for the FDA.</p> <p>13 Q. And so tell me what that is,</p> <p>14 Doctor.</p> <p>15 A. So all of the -- there are</p> <p>16 three of the case report studies that I have</p> <p>17 referenced in my article: Wu and Cramer and</p> <p>18 Schildkraut. And, in fact, Schildkraut was</p> <p>19 an NCI-sponsored study of African-American</p> <p>20 women and use of talcum powder and risk of</p> <p>21 ovarian cancer. And after it's been</p> <p>22 published, the NCI did update their talcum</p> <p>23 powder on ovarian cancer, to say that this</p> <p>24 study has shown that it increases risk of</p>	<p style="text-align: right;">Page 236</p> <p>1 MS. O'DELL: Excuse me. Object</p> <p>2 to the form. Give me just a minute to</p> <p>3 object. Fair enough. Sorry.</p> <p>4 A. Additionally, the</p> <p>5 meta-analysis, the Penninkilampi study that</p> <p>6 was published in 2017.</p> <p>7 BY MS. BROWN:</p> <p>8 Q. And that didn't include any new</p> <p>9 information, though, right? It's a</p> <p>10 meta-analysis of old data. True?</p> <p>11 A. Of all of the data, some of</p> <p>12 which wasn't available when the FDA wrote</p> <p>13 this letter.</p> <p>14 Q. Sure. But if we're trying to</p> <p>15 identify new data that you, Dr. Wolf, are</p> <p>16 relying on that the FDA didn't have, we have</p> <p>17 three case-control studies and an unpublished</p> <p>18 manuscript by a plaintiffs' expert?</p> <p>19 MS. O'DELL: Object to the --</p> <p>20 excuse me, object to the form,</p> <p>21 misstates her testimony.</p> <p>22 A. There's also two of the three</p> <p>23 cohort studies, the Nurses Health and Women's</p> <p>24 Health Initiative, the Sister Study. The</p>
<p style="text-align: right;">Page 235</p> <p>1 ovarian cancer in African-American women.</p> <p>2 And then the meta-analysis Penninkilampi 2018</p> <p>3 was not available. The recent abstracts and</p> <p>4 now paper from Dr. Saed on causation was not</p> <p>5 available.</p> <p>6 Q. So the three case-control</p> <p>7 studies that you believe distinguish your</p> <p>8 review of the literature from the FDA's are</p> <p>9 Wu 2015, Cramer 2016, and Schildkraut 2016,</p> <p>10 correct?</p> <p>11 A. Yes.</p> <p>12 Q. In addition to a -- is it a</p> <p>13 published paper by Dr. Saed?</p> <p>14 A. It's accepted for publication</p> <p>15 and there's four abstracts.</p> <p>16 Q. Okay. Has it been published</p> <p>17 yet, to your knowledge?</p> <p>18 A. It hasn't yet been published.</p> <p>19 Q. Okay. So in addition to the</p> <p>20 three case-control studies, there is an</p> <p>21 unpublished paper by a plaintiffs' expert in</p> <p>22 the talc litigation, that you say you're</p> <p>23 using to distinguish your review from the</p> <p>24 FDA's review?</p>	<p style="text-align: right;">Page 237</p> <p>1 Women's Health Initiative was published in</p> <p>2 2014, so they wouldn't have had it, likely</p> <p>3 wouldn't have, and the Sister Study.</p> <p>4 BY MS. BROWN:</p> <p>5 Q. And what was the finding as it</p> <p>6 relates to an increased talc use in ovarian</p> <p>7 cancer in the Sister Study?</p> <p>8 A. The Sister Study did not find a</p> <p>9 statistically significant increase, one of</p> <p>10 the issues with all of the three cohort</p> <p>11 studies is none of them are large enough to</p> <p>12 detect a difference and none of them looked</p> <p>13 at use over time.</p> <p>14 Q. Well, we're going to talk about</p> <p>15 that. But you'd agree that the Sister Study</p> <p>16 and the follow-up to the Nurses Health Study</p> <p>17 would not have changed the opinion of the</p> <p>18 FDA, that there's not a causative link twine</p> <p>19 talcum powder and ovarian cancer --</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 BY MS. BROWN:</p> <p>23 Q. -- right?</p> <p>24 A. I'm going to say that</p>

Judith K. Wolf, M.D.

Page 238	Page 240
<p>1 indirectly they might have if they had had 2 the meta-analysis by Penninkilampi, because 3 in that meta-analysis of the cohort studies 4 there was a statistical significantly 5 increase in serous carcinoma, which is the 6 most common type of epithelial ovarian 7 cancer, that if you were going to find 8 something in those number of women, serous 9 would be the most likely that you would find 10 a significant increase when they looked at 11 all of the cohort studies together. 12 Q. Now, of course Wu, the other 13 study that you pointed us to, found a greater 14 increase in the nonserous cancers, right? 15 THE WITNESS: Do you have Wu 16 for me to review? 17 MS. O'DELL: Yeah. 18 A. Yeah, it's not here. 19 BY MS. BROWN: 20 Q. I'll give you a copy, Doctor. 21 So we'll mark Wu as Exhibit 14. 22 (Deposition Exhibit 15 marked 23 for identification.) 24</p>	<p>1 subtype, right? And I'll direct you to Table 2 3 for that. 3 MS. O'DELL: Just for you to 4 orient yourself, Doctor. 5 THE WITNESS: Got it. 6 A. Which Schildkraut? 7 BY MS. BROWN: 8 Q. 2016. 9 A. 2016. 10 MS. BROWN: I'll give you a 11 copy right now. 12 A. So it does show a -- 13 significant in nonserous. 14 BY MS. BROWN: 15 Q. Right. And that's not 16 consistent with some of the other studies, 17 like Penninkilampi that you were talking 18 about earlier, correct? 19 A. Well, what I was specifically 20 talking about Penninkilampi was the cohort 21 studies, finding a statistical significantly 22 increase in serous cancers. If you look at 23 all of the studies, varying -- often it's 24 serous. It doesn't have to be serous. Some</p>
Page 239	Page 241
<p>1 BY MS. BROWN: 2 Q. I'll direct you to page 1414, 3 which is the "Subgroup Analysis by Histologic 4 Type." 5 MS. BROWN: Counsel, I have a 6 copy for you. Page 1414. I have two, 7 actually. 8 A. This must not be the right 9 paper either. There's no page 1414. 10 MS. BROWN: Wrong -- 11 A. Because there's a couple of 12 Wu's. 13 BY MS. BROWN: 14 Q. Yeah, there's two. We'll 15 remark it. This is it. No, this is another 16 Wu. I misspoke, Doctor. I meant to point 17 you to Schildkraut 2016, which is another 18 study that you identified as high quality, 19 right? 20 A. Yes. 21 Q. We'll mark that, as was my 22 intention, as 14. And you know one of the 23 findings of Schildkraut was a greater 24 association with the nonserous histologic</p>	<p>1 of the other studies found an increase in 2 endometrioid borderline tumors, other cell 3 types of ovarian tumors. 4 Q. Is it your opinion, Doctor, 5 that talcum powder use perineally increases a 6 woman's risk of all different histologic 7 types of ovarian cancer? 8 A. Well, I'm going to say that 9 we're looking at epithelial ovarian cancer, 10 and I don't have any evidence that has any 11 effect on stromal tumors or dermal cell 12 tumors. I think of all of the epithelial 13 subtypes, that it's been shown to have -- in 14 some studies, in various studies, an increase 15 in serous or endometrioid. And the other 16 subtypes are usually so small that there's 17 probably enough to know statistical 18 significance, such as clear cell or mucinous. 19 In this study by Schildkraut, it's just 20 serous or nonserous. They don't break up the 21 other subtypes, at least in this table. 22 Q. And the finding of the 23 nonserous increased risk is not consistent 24 with Penninkilampi's finding on that score,</p>

61 (Pages 238 to 241)

<p style="text-align: right;">Page 242</p> <p>1 correct?</p> <p>2 MS. O'DELL: Object to the</p> <p>3 form.</p> <p>4 A. In the cohort studies, it was</p> <p>5 serous. That was statistically significant.</p> <p>6 The two are not -- one does not negate the</p> <p>7 other. What I'm saying is that any of the</p> <p>8 epithelial varying tumors could possibly be</p> <p>9 increased, any cell type. This one shows</p> <p>10 nonserous. The meta-analysis of the cohorts</p> <p>11 showed serous, even though, except for the</p> <p>12 first report of the Nurses Health Study there</p> <p>13 wasn't any statistical increase in the cohort</p> <p>14 studies, one does not negate the other.</p> <p>15 BY MS. BROWN:</p> <p>16 Q. Gates was a follow-up to</p> <p>17 Gertig's --</p> <p>18 A. Gertig -- yeah.</p> <p>19 (Simultaneous discussion</p> <p>20 interrupted by reporter.)</p> <p>21 BY MS. BROWN:</p> <p>22 Q. Gates was a follow-up to --</p> <p>23 A. Gertig --</p> <p>24 MS. O'DELL: If you would let</p>	<p style="text-align: right;">Page 244</p> <p>1 BY MS. BROWN:</p> <p>2 Q. Sure. As a scientist</p> <p>3 evaluating data on cancer, the longer folks</p> <p>4 are studied, the more available information</p> <p>5 there is. True?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. That's true.</p> <p>9 BY MS. BROWN:</p> <p>10 Q. And in evaluating the body of</p> <p>11 literature on talc and ovarian cancer, you</p> <p>12 wouldn't want to close your eyes to some of</p> <p>13 the studies that include additional</p> <p>14 follow-up. True?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. I don't.</p> <p>18 BY MS. BROWN:</p> <p>19 Q. Did you know that Penninkilampi</p> <p>20 does not include the Gates study?</p> <p>21 A. So I'm going to look at that</p> <p>22 paper again to see why he might have left --</p> <p>23 he or she left the Gates study out.</p> <p>24 Q. And for the record, we'll mark</p>
<p style="text-align: right;">Page 243</p> <p>1 her finish and vice versa, I'll do my</p> <p>2 best not to interrupt you.</p> <p>3 BY MS. BROWN:</p> <p>4 Q. Dr. Wolf, Gates was a follow-up</p> <p>5 of the cohort that was followed in the Gertig</p> <p>6 Nurses Health Study, correct?</p> <p>7 A. That's correct.</p> <p>8 Q. And when that cohort was</p> <p>9 followed longer in Gates, there was no</p> <p>10 association with serous cancer, correct?</p> <p>11 A. That's correct.</p> <p>12 Q. And do you agree that it's</p> <p>13 important, when evaluating a body of</p> <p>14 literature, to evaluate all available</p> <p>15 information?</p> <p>16 A. Yes.</p> <p>17 Q. And particularly as it relates</p> <p>18 to the follow-up of individuals who were</p> <p>19 initially studied for perhaps a shorter</p> <p>20 period of time. Fair?</p> <p>21 MS. O'DELL: Object to the</p> <p>22 form.</p> <p>23 A. So long-term follow-up is</p> <p>24 always helpful, yes.</p>	<p style="text-align: right;">Page 245</p> <p>1 Penninkilampi as Exhibit 16 your deposition.</p> <p>2 (Deposition Exhibit 16 marked</p> <p>3 for identification.)</p> <p>4 BY MS. BROWN:</p> <p>5 Q. And to help with your review,</p> <p>6 Doctor, if you want to, take as much as you</p> <p>7 need, but page 46 lists the name of the</p> <p>8 studies that are included and Table A was the</p> <p>9 meta-analysis for ever use in ovarian cancer.</p> <p>10 And you agree with me that Gates 2010 is not</p> <p>11 included?</p> <p>12 MS. O'DELL: Feel free to take</p> <p>13 a look at the paper before you answer</p> <p>14 the questions, Doctor.</p> <p>15 A. I see that it was not included.</p> <p>16 BY MS. BROWN:</p> <p>17 Q. And in writing your report and</p> <p>18 identifying Gates as one of the higher</p> <p>19 quality studies, were you aware at the time</p> <p>20 that Gates had omitted the follow-up to the</p> <p>21 Nurses Health Study as published in Gates</p> <p>22 2010?</p> <p>23 MS. O'DELL: Object to the form</p> <p>24 of the question. I don't think that</p>

Page 246	Page 248
<p>1 she referred to Gates as a</p> <p>2 high-quality study in her report.</p> <p>3 MS. BROWN: Let me rephrase.</p> <p>4 That's my fault.</p> <p>5 BY MS. BROWN:</p> <p>6 Q. In writing your report and</p> <p>7 identifying Penninkilampi as one of the</p> <p>8 higher quality studies, were you aware that</p> <p>9 Penninkilampi excluded the Gates 2010</p> <p>10 follow-up to the Nurses Health Study?</p> <p>11 A. Given that they left it out or</p> <p>12 they didn't include it, to me it doesn't</p> <p>13 negate that I think the Penninkilampi study</p> <p>14 is a good study. I was trying to see if</p> <p>15 there was a reason why they didn't look at it</p> <p>16 and I don't see anything mentioned in their</p> <p>17 methods or in their discussion or their</p> <p>18 results as to why they did not include it. I</p> <p>19 still think the Penninkilampi is a good</p> <p>20 study.</p> <p>21 Q. Okay. And you are not at all</p> <p>22 concerned -- would you weigh Penninkilampi</p> <p>23 less, given the fact that it did not include</p> <p>24 the most complete data from the Nurses</p>	<p>1 BY MS. BROWN:</p> <p>2 Q. So your critique of the Berge</p> <p>3 paper is that there's not a subgroup analysis</p> <p>4 by histologic type?</p> <p>5 MS. O'DELL: Object to the</p> <p>6 form.</p> <p>7 A. That's -- that wasn't a</p> <p>8 critique, it's a piece of information. That</p> <p>9 differently from the Penninkilampi study,</p> <p>10 which was looking specifically at serous</p> <p>11 histology of the cohorts, the Berge study</p> <p>12 didn't look at serous from the cohort</p> <p>13 separately, they looked at serous overall</p> <p>14 separately. It's just a difference. It's</p> <p>15 not a critique.</p> <p>16 BY MS. BROWN:</p> <p>17 Q. So one of the things that</p> <p>18 Penninkilampi looked at was whether ever use</p> <p>19 of talc increases the risk for ovarian</p> <p>20 cancer.</p> <p>21 A. Yes.</p> <p>22 Q. Do you understand that?</p> <p>23 A. Yes.</p> <p>24 Q. And that is the same question</p>
Page 247	Page 249
<p>1 Health?</p> <p>2 MS. O'DELL: Object to form.</p> <p>3 A. I'm -- I can't answer that</p> <p>4 question because I don't know what the data</p> <p>5 would look like if they included the study.</p> <p>6 BY MS. BROWN:</p> <p>7 Q. Well, did you review the Berge</p> <p>8 analysis, the meta-analysis that was done</p> <p>9 close to the same time?</p> <p>10 A. Yes.</p> <p>11 Q. Okay. And were you aware that</p> <p>12 Berge actually did include Gates as the most</p> <p>13 recent representation of the Nurses Health</p> <p>14 cohort? We'll mark the Berge meta-analysis</p> <p>15 as Exhibit 17.</p> <p>16 (Deposition Exhibit 17 marked</p> <p>17 for identification.)</p> <p>18 (Witness reviews document.)</p> <p>19 A. So what I don't see in the</p> <p>20 Berge paper is if they separated out serous</p> <p>21 for the cohort studies. They looked at</p> <p>22 serous separately in the study. What I don't</p> <p>23 see, that they looked at serous histology in</p> <p>24 the case-control versus the cohorts.</p>	<p>1 that was investigated by Berge, correct?</p> <p>2 A. Yes.</p> <p>3 Q. And Penninkilampi excluded the</p> <p>4 most recent data on the Nurses Health cohort</p> <p>5 and Berge included it, correct?</p> <p>6 A. Yes.</p> <p>7 MS. O'DELL: Object to the</p> <p>8 form.</p> <p>9 A. And in ever use of talc in the</p> <p>10 cohort studies, both of them found no --</p> <p>11 nothing, no significant increase.</p> <p>12 In the Penninkilampi study,</p> <p>13 which I understand does not include the Gates</p> <p>14 data, when they looked specifically at the</p> <p>15 cohort studies, there was a significant</p> <p>16 increase in serous.</p> <p>17 In the Berge study when they</p> <p>18 looked at everything, case-control and</p> <p>19 cohorts together, there was a significant</p> <p>20 increase in the risk for serous histology.</p> <p>21 BY MS. BROWN:</p> <p>22 Q. I'm sorry, say that last part</p> <p>23 again, in the --</p> <p>24 A. In the Berge study --</p>

Page 250	Page 252
<p>1 Q. Uh-huh.</p> <p>2 A. -- what I'm reading here is,</p> <p>3 there is a significant increase in serous</p> <p>4 histology.</p> <p>5 Q. In the case-control studies,</p> <p>6 correct?</p> <p>7 A. I don't see that they separated</p> <p>8 out the case-control studies.</p> <p>9 Q. In reviewing the Berge and</p> <p>10 Penninkilampi meta-analyses, did you pay</p> <p>11 attention to the tests for heterogeneity that</p> <p>12 the authors did in terms of which studies</p> <p>13 could and could not be combined?</p> <p>14 A. In which study are you asking</p> <p>15 me about? I'm sorry. I'm still distracted</p> <p>16 by the Berge one here.</p> <p>17 Q. Do you understand the concept</p> <p>18 of heterogeneity in meta-analysis?</p> <p>19 A. Yes.</p> <p>20 Q. Okay. And so you understand</p> <p>21 that there are certain studies that can --</p> <p>22 because of their study design cannot be</p> <p>23 combined, correct?</p> <p>24 A. Yes.</p>	<p>1 BY MS. BROWN:</p> <p>2 Q. Even though it excludes the</p> <p>3 most recent data from the Nurses Health</p> <p>4 Study. True?</p> <p>5 MS. O'DELL: Object to the</p> <p>6 form.</p> <p>7 A. I specifically chose it because</p> <p>8 it's the most recent one.</p> <p>9 BY MS. BROWN:</p> <p>10 Q. Okay. And you understand that</p> <p>11 the Berge meta-analysis was published at</p> <p>12 right about the same time, right?</p> <p>13 MS. O'DELL: Object to the</p> <p>14 form.</p> <p>15 A. I have to look at the exact</p> <p>16 date.</p> <p>17 MS. BROWN: We need to change</p> <p>18 the tape, so let's go off for a</p> <p>19 second.</p> <p>20 THE VIDEOGRAPHER: Going off</p> <p>21 the record. The time is 2:21 p.m.</p> <p>22 (Recess taken from 2:21 p.m. to</p> <p>23 2:26 p.m.)</p> <p>24 THE VIDEOGRAPHER: This marks</p>
Page 251	Page 253
<p>1 Q. And in evaluating the</p> <p>2 Penninkilampi meta-analysis and the Berge</p> <p>3 meta-analysis, did you undertake an effort to</p> <p>4 evaluate the heterogeneity of the studies</p> <p>5 that were combined in those two</p> <p>6 meta-analyses?</p> <p>7 A. And compare the two, is that</p> <p>8 what you're asking me?</p> <p>9 Q. Sure. Here's what I'm after,</p> <p>10 Doctor. I understand that you made a</p> <p>11 determination Penninkilampi is one of the</p> <p>12 more high-quality studies?</p> <p>13 A. Yes.</p> <p>14 Q. And I want to understand your</p> <p>15 methodology in selecting Penninkilampi as a</p> <p>16 higher quality study than Berge.</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form.</p> <p>19 A. So when I look at all of the</p> <p>20 meta-analyses, they all show a significant</p> <p>21 increase in the risk of ovarian cancer with</p> <p>22 minimal use of talcum powder use. I</p> <p>23 specifically chose the Penninkilampi one</p> <p>24 because it was the most recent one.</p>	<p>1 the beginning of disk 3. Back on the</p> <p>2 record. The time is 2:26 p.m.</p> <p>3 BY MS. BROWN:</p> <p>4 Q. Dr. Wolf, before we took a</p> <p>5 break, we were discussing the difference</p> <p>6 between Penninkilampi and the Berge</p> <p>7 meta-analyses. I want to direct your</p> <p>8 attention to page 42 of the Penninkilampi</p> <p>9 article.</p> <p>10 A. That's in this one. Page 42.</p> <p>11 Q. And in the first paragraph on</p> <p>12 the left-hand column, one of the things the</p> <p>13 authors of Penninkilampi note, is that the</p> <p>14 majority of the evidence as it relates to</p> <p>15 perineal talc use in ovarian cancer has come</p> <p>16 from case-control studies, correct?</p> <p>17 MS. O'DELL: Where are you</p> <p>18 reading?</p> <p>19 A. Where are you reading?</p> <p>20 BY MS. BROWN:</p> <p>21 Q. "The evidence for the</p> <p>22 association between perineal talc use and</p> <p>23 ovarian cancer is based on the body of</p> <p>24 knowledge from observational studies and most</p>



<p style="text-align: right;">Page 254</p> <p>1 of these have been retrospective case-control  2 studies prone to recall bias."  3 Do you see that?  4 A. I see that.  5 Q. And do you agree with that,  6 Doctor, that most of the case-control studies  7 that you evaluated and that form the body of  8 epidemiology on talc and ovarian cancer are  9 prone to recall bias?  10 MS. O'DELL: Object to the  11 form.  12 A. I don't agree with that  13 statement. I do agree that one concern of  14 case-control studies is recall bias. I  15 believe that was acknowledged in most, if not  16 all, of the case-control studies and felt not  17 to be an issue. And I looked at that, but  18 the weight of the evidence suggests that most  19 of the studies showed a relationship.  20 Also in a rare disease like  21 ovarian cancer, although a prospective study  22 would be -- might be -- give us more  23 information, the number of women and the  24 amount of time that it would take to do a</p>	<p style="text-align: right;">Page 256</p> <p>1 biostatistician, correct?  2 A. No.  3 Q. Okay. Did you perform a power  4 calculation on any of the studies that you  5 reviewed?  6 A. I did not, but Dr. Narod  7 published a paper where he actually looked at  8 that question and estimated that it would  9 take about 200,000 women to answer the  10 question, and none of these studies have  11 that.  12 Q. And have you calculated how  13 many women were studied in all of the  14 prospective studies and whether or not that  15 was more or less than 200,000?  16 A. Well, if you look at all of  17 them together, putting them together, there  18 are more than 200,000.  19 Q. And did that inform your  20 opinion that the prospective studies -- how  21 did you consider that fact in making the  22 statement that the cohort studies are limited  23 by a lack of power?  24 A. Because each individual study</p>
<p style="text-align: right;">Page 255</p> <p>1 prospective study makes it challenging, and  2 that's one of the challenges with all of the  3 cohort studies. None of them are big enough  4 and most of them are not followed long  5 enough.  6 And so case-control studies are  7 what -- the best way to study a rare disease  8 like this. And given the consistency in the  9 findings, although recall bias can occur, I  10 don't believe it -- after my review of the  11 entire literature, I'm not concerned that  12 recall bias had an effect on the results.  13 BY MS. BROWN:  14 Q. You state in your report on  15 page 8, that all of the cohort studies are  16 limited by lack of power.  17 A. Yes.  18 Q. Is that your opinion?  19 A. Lack of power to ask the  20 specific question, yes.  21 Q. Lack of power to ask?  22 A. To answer the specific  23 question.  24 Q. Okay. And you are not a</p>	<p style="text-align: right;">Page 257</p> <p>1 is limited by lack of power. And two of the  2 three studies are limited by the amount of  3 follow-up and all of the studies are limited  4 by the documentation of how much -- how often  5 and how frequent powder was used. The --  6 short of the Sister Study, the primary  7 endpoints of the Nurses Health Study and the  8 Women's Health Study were not to look at the  9 relationship of talc and ovarian cancer. It  10 was a secondary add-on study that was done  11 while the studies were ongoing. So they  12 weren't designed to answer that question.  13 Q. Did you consider the published  14 power calculation done by Berge?  15 A. Let me look at Berge's  16 published power calculation.  17 Q. Do you know that -- do you  18 know -- do you recall reviewing that in  19 connection with your --  20 A. I recall --  21 Q. -- testimony?  22 A. -- reviewing the paper. I  23 don't recall specifically what his -- his  24 person -- I don't know this person.</p>



<p style="text-align: right;">Page 258</p> <p>1 Q. I'll direct your attention,  2 then, Doctor, to page 6 of the Berge paper.  3 It looks like you might have a different  4 version than I do, but page 6 of the  5 publication, second column, first paragraph  6 on the --  7 A. What part of the paper is it  8 in?  9 Q. The discussion section.  10 A. Okay.  11 Q. It's my third paragraph of the  12 discussion section.  13 A. Gotcha.  14 Q. And let me just read this into  15 the record to expedite us here. "An  16 important feature of the present  17 meta-analysis is the inclusion of several  18 cohort studies, which enabled an analysis  19 stratified by study design. This analysis  20 provided evidence of a heterogeneity of  21 results between the two groups of studies  22 with an association generally detected in  23 case-control studies but not in cohort  24 studies. It should be noted that the cohort</p>	<p style="text-align: right;">Page 260</p> <p>1 MS. O'DELL: Excuse me, when  2 you say "here," are you referring to  3 your report?  4 A. In my report, under "Summary of  5 Epidemiological Evidence" on page 8.  6 BY MS. BROWN:  7 Q. And one of the things, Doctor,  8 you provided a site that meta-analyses can be  9 some of the highest form of epidemiological  10 evidence, correct?  11 A. Yes.  12 Q. And the Penninkilampi study  13 that you pointed to was one of the highest --  14 MS. O'DELL: Why don't we go  15 off the record.  16 MS. BROWN: Let's try to keep  17 going.  18 BY MS. BROWN:  19 Q. The Penninkilampi study that  20 you pointed to as one of the higher quality  21 studies is, in fact, a meta-analysis,  22 correct?  23 A. That's correct.  24 Q. And you are certainly not</p>
<p style="text-align: right;">Page 259</p> <p>1 studies included in the meta-analysis  2 comprised of a total of 429 cases of ovarian  3 cancer exposed to genital talc and 943  4 unexposed: The statistical power of the  5 meta-analysis of these cohort studies to  6 detect a relative risk of 1.25, similar to  7 the result of the meta-analysis of  8 case-control studies, was .99. Thus, low  9 power of cohort studies cannot be invoked as  10 an explanation of the heterogeneity of the  11 results."  12 Did you consider Berge's power  13 calculation when you made the statement in  14 your report, that all of the cohort studies  15 are limited by lack of power?  16 A. My statement is in relationship  17 into each study on their own, not all of them  18 together. And my statement about the lack of  19 power for all over, my opinion about that was  20 based on Narod's paper of needing 200,000  21 women. But this is about -- this is -- this  22 statement here is about each study on their  23 own. None of those studies had 200,000  24 women.</p>	<p style="text-align: right;">Page 261</p> <p>1 meaning to suggest that there's something  2 improper about pooling or combining data in a  3 meta-analysis, correct?  4 MS. O'DELL: Object to the  5 form.  6 A. I don't believe I ever said  7 anything about -- negative about a  8 meta-analysis.  9 BY MS. BROWN:  10 Q. Do you -- did you consider  11 Berge's power calculation of the pooled  12 prospective cohorts when you opined as you  13 did in your report on page 8, that all of the  14 cohort studies are limited by lack of power?  15 MS. O'DELL: Object to the  16 form.  17 A. The two are not comparing the  18 same thing. His power analysis is looking at  19 the pooled analysis. My statement was  20 regarding each individual cohort study on its  21 own.  22 BY MS. BROWN:  23 Q. Do you think there is enough  24 power in the pooled prospective cohorts to</p>

<p style="text-align: right;">Page 262</p> <p>1 detect a relative risk of 1.25?</p> <p>2 A. I see that Berge says that in</p> <p>3 his discussion. I'm not a statistician. I'd</p> <p>4 have to -- I'm not sure I could answer that</p> <p>5 and I guess I'm going to ask you to -- do you</p> <p>6 think there's enough power in the pooled</p> <p>7 prospective cohorts to detect a relative risk</p> <p>8 of 1.25? I'm going to say possibly. I don't</p> <p>9 know.</p> <p>10 Q. In identifying Penninkilampi as</p> <p>11 one of the higher quality studies, did you do</p> <p>12 an independent verification that the data</p> <p>13 Penninkilampi reports in his article is</p> <p>14 indeed accurate?</p> <p>15 A. Are you -- my understanding of</p> <p>16 what you're asking me is, did I recalculate</p> <p>17 the results? Is that what you're asking me?</p> <p>18 Q. No. I'm asking you, for</p> <p>19 example, on page 46 of Penninkilampi -- we</p> <p>20 have them as exhibits, if that makes it</p> <p>21 easier.</p> <p>22 A. No, I -- okay. Page 46.</p> <p>23 Q. Penninkilampi reports studies,</p> <p>24 a purported odds ratio, a lower limit and an</p>	<p style="text-align: right;">Page 264</p> <p>1 Q. In evaluating the Penninkilampi</p> <p>2 meta-analysis and the Berge analysis, explain</p> <p>3 to me how you weighted both of them.</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 A. When I was looking at all of</p> <p>7 the meta-analysis, including the Berge and</p> <p>8 the Penninkilampi, to me it -- all of them</p> <p>9 showed a positive correlation between genital</p> <p>10 talcum powder use and ovarian cancer. I</p> <p>11 chose the most recent one to include in my</p> <p>12 report.</p> <p>13 BY MS. BROWN:</p> <p>14 Q. Other than the fact that</p> <p>15 Penninkilampi was the most recent, is there</p> <p>16 any reason -- any other reason you didn't</p> <p>17 include Berge in your report?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 A. Was there any other reason I</p> <p>21 didn't include Berge?</p> <p>22 BY MS. BROWN:</p> <p>23 Q. Correct.</p> <p>24 A. The reason I chose</p>
<p style="text-align: right;">Page 263</p> <p>1 upper limit. Do you see that?</p> <p>2 A. Yeah.</p> <p>3 Q. Did you go back to the</p> <p>4 individual studies to verify that</p> <p>5 Penninkilampi was correct in that reporting?</p> <p>6 A. Oh, that -- in these charts?</p> <p>7 Q. Correct.</p> <p>8 A. That every -- I did not.</p> <p>9 Q. Would it be important to you in</p> <p>10 determining that a study is of high quality,</p> <p>11 that the authors accurately report the odds</p> <p>12 ratios and the confidence intervals?</p> <p>13 A. It would, but it's not my</p> <p>14 routine or standard for me to go back and</p> <p>15 re-review the odds ratios of every paper to</p> <p>16 confirm that. I would assume that is part of</p> <p>17 the peer-review process that has happened.</p> <p>18 Q. And if there were, in fact,</p> <p>19 errors in the reporting of the odds ratios or</p> <p>20 the confidence intervals, would that call</p> <p>21 into question your reliance on the study?</p> <p>22 A. I would want to see it</p> <p>23 recalculated, if there were -- if there were</p> <p>24 errors.</p>	<p style="text-align: right;">Page 265</p> <p>1 Penninkilampi was because it was the most</p> <p>2 recent. And in my interpretation of the</p> <p>3 meta-analysis, they all show a positive</p> <p>4 correlation, so I just wanted to show the</p> <p>5 most recent.</p> <p>6 Q. And you'll agree with me that</p> <p>7 both meta-analyses -- or the Berge</p> <p>8 meta-analysis shows no increased risk in the</p> <p>9 cohorts, correct?</p> <p>10 A. No increased risk in the</p> <p>11 cohort -- pooled cohorts in the Berge paper.</p> <p>12 Q. And if you consider the Gates</p> <p>13 study as the most recent data available on</p> <p>14 the Nurses Health cohort, you'll agree with</p> <p>15 me there is no evidence at all in the</p> <p>16 prospective cohorts of any increased risk of</p> <p>17 ovarian cancer with talc use. True?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 A. With the -- the other issues</p> <p>21 with the cohort studies is they ask ever use,</p> <p>22 not current use, length of use, time of use.</p> <p>23 Both the Gates and Gertig and the Houghton,</p> <p>24 the Women's Health Initiative, those studies</p>

Judith K. Wolf, M.D.

Page 266	Page 268
<p>1 were not designed to be able to ask those 2 questions and so we can't have that 3 information. And so the limitations of the 4 cohort studies, as -- as I said before, 5 individually, lack of power, not making the 6 correct queries and short follow-up, except 7 the second follow-up of Gates, but that's 8 only one study and it's still not large 9 enough. 10 BY MS. BROWN: 11 Q. That wasn't my question. My 12 question was, if you consider Gates as the 13 most recent data on the Nurses Health cohort, 14 you would agree with me that there is no 15 evidence in any of the prospective studies 16 that shows a statistically significant 17 increased risk of ovarian cancer with 18 perineal task use. True? 19 MS. O'DELL: Object to the 20 form. 21 A. I would say that all the 22 cohorts or cohort studies have the same 23 limitations, not large enough, not asking the 24 right questions, and the only one that</p>	<p>1 that might get at the answer, two of the 2 three by not being designed to answer that 3 question. And so with those caveats, they 4 saw no statistically significant increase in 5 ovarian cancer with talcum powder use 6 reported as ever use. 7 BY MS. BROWN: 8 Q. What's your methodology for -- 9 do you weight the cohorts and the case 10 controls equally in your analysis? 11 MS. O'DELL: Objection to the 12 form. 13 A. I consider all of the evidence, 14 not only the epidemiologic evidence but the 15 causation evidence, the animal in the in 16 vitro data as a whole and formed my opinion. 17 BY MS. BROWN: 18 Q. My question was, do you weight 19 the case controls equally to the cohorts? 20 MS. O'DELL: Objection, asked 21 and answered. 22 You may answer it. 23 A. I look at the entire evidence, 24 all the epidemiologic evidence, as well as</p>
Page 267	Page 269
<p>1 doesn't have the shortest -- short follow-up, 2 which it still may not be long enough, is the 3 Nurses Health Study. And with those caveats, 4 there was no statistically significant 5 increase in ovarian cancer in perineal talcum 6 powder use. But given that ovarian cancer's 7 a rare disease and with those caveats, I'm 8 not sure that they're designed to answer the 9 question. So it doesn't say to me there 10 isn't a risk. 11 BY MS. BROWN: 12 Q. But that wasn't my question. 13 My question was just, there is not a single 14 prospective study that shows an increased 15 risk of ovarian cancer with talcum powder 16 use. That's it. It's yes or no. 17 MS. O'DELL: Excuse me. No, 18 it's not. Objection to form. You may 19 answer it in any way you choose, 20 Dr. Wolf. 21 A. The studies are all limited by 22 lack of power, by short follow-up in two of 23 the three and maybe short follow-up in all 24 three, by not asking the correct questions</p>	<p>1 the in vitro and in vivo evidence and made my 2 decision. 3 BY MS. BROWN: 4 Q. Are you not understanding that 5 question? 6 MS. O'DELL: Counselor, you can 7 ask the questions, but she's given you 8 an answer. Just because you don't 9 like the answer doesn't mean she 10 didn't answer the question. 11 MS. BROWN: I've heard the same 12 answer nine times. The question is -- 13 MS. O'DELL: You're asking the 14 question over and over again. 15 MS. BROWN: You're wasting so 16 much time. 17 BY MS. BROWN: 18 Q. My question really just goes to 19 weight. Okay. I understand you marked at 20 the beginning of the deposition weight of the 21 evidence from UpToDate. Do you remember 22 that? 23 A. Yeah. 24 Q. And my question is just, when</p>

68 (Pages 266 to 269)

<p style="text-align: right;">Page 270</p> <p>1 you did this analysis, did you give equal  2 weight to the cohorts and the case controls?  3 MS. O'DELL: Objection to the  4 preamble, which was incorrect, but you  5 may answer.  6 A. So I weighted every piece of  7 evidence not separating by the type of study,  8 but looking at the strengths and the  9 weaknesses of the study and then together put  10 the evidence to make my opinion.  11 BY MS. BROWN:  12 Q. On page 3 of your report,  13 Doctor, you reference the National Cancer  14 Institute and that's the public health  15 authority's definition of a risk factor. Do  16 you remember that?  17 A. Yes.  18 Q. Fair to say one of the reasons  19 you reference the National Cancer Institute  20 is that you consider it to be a leading  21 public health authority, particularly when it  22 comes to cancer?  23 MS. O'DELL: Object to the  24 form.</p>	<p style="text-align: right;">Page 272</p> <p>1 it.  2 (Deposition Exhibit 18 marked  3 for identification.)  4 BY MS. BROWN:  5 Q. I'm handing you what we've  6 marked as Exhibit 18 to your deposition,  7 which is a printout from the NCI's website,  8 entitled "Ovarian, Fallopian Tube and Primary  9 Peritoneal Cancer Prevention, Health  10 Professional Version." Do you see that,  11 Doctor?  12 A. Yes.  13 Q. And during your work as a  14 gynecologic oncologist, did you look to the  15 NCI for information on how to treat your  16 patients?  17 A. Occasionally, but not  18 routinely.  19 Q. Do you consider the National  20 Cancer Institute to be a reliable source of  21 information on cancer epidemiology?  22 MS. O'DELL: Object to the  23 form.  24 A. I consider it a reliable source</p>
<p style="text-align: right;">Page 271</p> <p>1 A. Specifically here, I reference  2 the National Cancer Institute because of  3 their definition of "associations" versus  4 "causative" risk factors.  5 BY MS. BROWN:  6 Q. And you consider the National  7 Cancer Institute to be a leading public  8 health authority. True?  9 MS. O'DELL: Objection to the  10 form, asked and answered.  11 A. So if you're asking me -- what  12 I think I hear you asking me is why did I  13 reference the National Cancer Institute here,  14 and I referenced it because of this  15 definition.  16 BY MS. BROWN:  17 Q. The National Cancer Institute  18 has reviewed the epidemiology on talc and  19 ovarian cancer, correct?  20 A. That's correct.  21 Q. Did you consider the National  22 Cancer Institute's review of the epidemiology  23 in forming your opinions in this case?  24 A. I read it and I did consider</p>	<p style="text-align: right;">Page 273</p> <p>1 on cancer as a whole. And again, to me  2 it's -- it's one of the pieces of evidence  3 that I might look to to find some  4 information.  5 BY MS. BROWN:  6 Q. And what the National Cancer  7 Institute has done here is evaluate risk  8 factors for ovarian cancer, correct?  9 A. Yes.  10 Q. And, for example, if you look  11 at page 3 of 21, the National Cancer  12 Institute's information begins with factors  13 with adequate evidence of an increased risk  14 of ovarian cancer, correct?  15 A. Yes.  16 Q. Okay. And they list things  17 like endometriosis, correct?  18 A. Yeah.  19 Q. They list hormone replacement  20 therapy. True?  21 A. Yes.  22 Q. And the National Cancer  23 Institute goes on -- and one of the things  24 they do not list as a factor with adequate</p>

Page 274	Page 276
<p>1 evidence of an increased risk is talcum 2 powder use, correct? 3 A. That's correct. 4 Q. And what the National Cancer 5 Institute does, is it identifies some area 6 where there's uncertainty in terms of a risk 7 factor, right? 8 A. Yes. 9 Q. And so on page 7 of 21, for 10 example, they identify infertility treatment 11 as an area of uncertainty, correct? 12 A. Yes. 13 Q. And when it comes to perineal 14 talc use, however, the National Cancer 15 Institute has determined that that is a 16 factor with inadequate evidence of an 17 association of the risk of ovarian cancer, 18 correct? 19 MS. O'DELL: Object to the 20 form. 21 A. That's where they placed it in 22 this, yes. 23 BY MS. BROWN: 24 Q. And directing your attention to</p>	<p>1 BY MS. BROWN: 2 Q. Let's reorient ourselves now 3 that we're all on the same page. The 4 National Cancer Institute has classified 5 perineal talc exposure as a factor with 6 inadequate evidence of an association with 7 ovarian cancer, correct? 8 MS. O'DELL: Object to the 9 form. 10 A. It's listed under factors with 11 inadequate evidence, that's correct. 12 BY MS. BROWN: 13 Q. All right. And the National 14 Cancer Institute has factors with adequate 15 evidence, right? 16 A. Yes. 17 Q. We just looked at some. 18 A. Yes. 19 Q. It has factors with uncertain 20 evidence, right? 21 A. Yes. 22 Q. And then it has factors with 23 inadequate evidence, and that includes 24 perineal talc exposure, correct?</p>
Page 275	Page 277
<p>1 page 14 of 21, what the National Cancer 2 Institute has concluded is that, "The weight 3 of the evidence does not support an 4 association between perineal talc exposure 5 and an increased risk of ovarian cancer. 6 Results from case-control and cohort studies 7 are inconsistent." 8 Do you see that? 9 MS. O'DELL: Object to the 10 form. Can I just ask where you're 11 reading from? You said page 21. 12 A. Yeah, I don't see that. 13 BY MS. BROWN: 14 Q. Page 14 of 21. 15 MS. O'DELL: We don't have 21. 16 We have 18 pages. 17 A. And page 14 is references. 18 BY MS. BROWN: 19 Q. You have a different version 20 than I do. I'll get you there. Right here, 21 perineal talc exposure. 22 MS. O'DELL: So repeat the 23 question, please. 24 MS. BROWN: Sure.</p>	<p>1 A. That's correct. 2 MS. O'DELL: Object to the 3 form. 4 BY MS. BROWN: 5 Q. And what the National Cancer 6 Institute has determined here is that the 7 weight of the evidence does not support an 8 association between perineal talc exposure 9 and an increased risk of ovarian cancer. 10 A. That's the part I don't -- 11 Q. Results -- 12 A. That's where I'm trying to find 13 -- 14 Q. Let me read it and then I'm 15 going to help you. 16 "Results from case-control and 17 cohort studies are inconsistent." And what 18 I'm reading are the first two lines of the 19 perineal talc exposure section. 20 A. Okay. Okay. What's your 21 question? 22 Q. You, Dr. Wolf, disagree with 23 the National Cancer Institute, correct? 24 A. In this instance, I do.</p>



Judith K. Wolf, M.D.

Page 278	Page 280
<p>1 Q. And tell me what methodology</p> <p>2 you have employed that is different from the</p> <p>3 weight of the evidence approach, referenced</p> <p>4 here by the National Cancer Institute.</p> <p>5 A. So I see that the National</p> <p>6 Cancer Institute has referenced five</p> <p>7 articles. So one of the things is that I</p> <p>8 believe that my review of the entire body of</p> <p>9 literature is much broader than five</p> <p>10 articles. And when I look at the most recent</p> <p>11 article, they do have one article from 2016,</p> <p>12 which is the Schildkraut data, which is --</p> <p>13 they just now at the end of 2018, added that</p> <p>14 data into theirs. So I would say there's</p> <p>15 other data that they either didn't have when</p> <p>16 they did the review or didn't include when</p> <p>17 they did the review.</p> <p>18 Q. And in offering that opinion,</p> <p>19 have you considered, Doctor, that according</p> <p>20 to this document from the NCI, board members</p> <p>21 meet monthly to review recently published</p> <p>22 articles? I'll point you to the section</p> <p>23 entitled "About This PDQ Summary," at the</p> <p>24 very end, under the section "Reviewers and</p>	<p>1 opinion. It's my experience that in order to</p> <p>2 get someone like the National Cancer</p> <p>3 Institute or some other guideline to suggest</p> <p>4 something, there's generally a lag of several</p> <p>5 years between publication of all the</p> <p>6 literature and when the committee changes</p> <p>7 something. An example of that is that the</p> <p>8 Schildkraut paper was published in 2016. It</p> <p>9 wasn't until the -- end of 2018 that they</p> <p>10 included it.</p> <p>11 Q. Dr. Wolf, are you aware of any</p> <p>12 public health authority that has concluded</p> <p>13 talcum powder causes ovarian cancer?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. I'm aware that IARC has</p> <p>17 considered that talc is possibly</p> <p>18 carcinogenic, that asbestos is carcinogenic.</p> <p>19 BY MS. BROWN:</p> <p>20 Q. IARC has not concluded that</p> <p>21 talc causes ovarian cancer, correct?</p> <p>22 MS. O'DELL: Object to the</p> <p>23 form.</p> <p>24 A. One of the reasons for the</p>
Page 279	Page 281
<p>1 Updates," do you see the National Cancer</p> <p>2 Institute's --</p> <p>3 A. I see that.</p> <p>4 Q. -- board members meeting</p> <p>5 monthly to review recently published</p> <p>6 articles, right?</p> <p>7 A. Yes.</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 BY MS. BROWN:</p> <p>11 Q. And we see at the very last</p> <p>12 page, that this particular document was</p> <p>13 updated a few weeks ago in December 21st of</p> <p>14 2018?</p> <p>15 A. Yes.</p> <p>16 Q. Okay. Do you have any other</p> <p>17 scientific evidence or methodology that would</p> <p>18 distinguish your review of the literature</p> <p>19 from the folks at the National Cancer</p> <p>20 Institute?</p> <p>21 A. I'm going to go back to the</p> <p>22 review of the entire body of the literature.</p> <p>23 I don't know which articles they look at once</p> <p>24 a month to make a determination with their</p>	<p>1 review of talc was the concern of ovarian</p> <p>2 cancer. The fact that they have considered</p> <p>3 it possibly carcinogenic, to me is an</p> <p>4 indication that they think it's possibly</p> <p>5 carcinogenic.</p> <p>6 BY MS. BROWN:</p> <p>7 Q. Okay. Let's break that up.</p> <p>8 Are you aware of any public health authority</p> <p>9 that agrees with your opinion that talcum</p> <p>10 powder causes ovarian cancer?</p> <p>11 MS. O'DELL: Object to the</p> <p>12 form.</p> <p>13 A. When I formed my opinion, I</p> <p>14 looked at all of the data that was available</p> <p>15 to me, including the data as recent as</p> <p>16 December. The Canada health assessment, the</p> <p>17 Taher paper. And I believe that my opinion</p> <p>18 is based on a greater weight of the evidence</p> <p>19 than the review of the National Cancer</p> <p>20 Institute or anything that was available</p> <p>21 prior to this for a body to review. And if I</p> <p>22 go back to the talc and IARC study, even with</p> <p>23 papers only till 2007 and 2008, there was</p> <p>24 enough evidence that they thought that talc</p>

71 (Pages 278 to 281)



<p style="text-align: right;">Page 282</p> <p>1 was possibly carcinogenic.  2 BY MS. BROWN:  3 Q. IARC did not consider three of  4 the four prospective cohort studies that  5 showed no increased risk of with talcum  6 powder, true?  7 A. They also did not show --  8 include any paper that was published after  9 2007.  10 Q. And that would include three of  11 the four prospective cohort studies that  12 showed no risk, right?  13 A. That would include anything  14 published after 2007.  15 Q. And as I understand your  16 testimony as it relates to the National  17 Cancer Institute, you believe that despite  18 the fact that the NCI updated its position as  19 recently as a few weeks ago, they have not  20 reviewed the most latest literature. Is that  21 your testimony?  22 MS. O'DELL: Object to the  23 form.  24 A. I'm saying that I don't know if</p>	<p style="text-align: right;">Page 284</p> <p>1 correct?  2 A. Yes.  3 Q. And IARC has and done -- has  4 and does make that determination as it  5 relates to certain substances, correct?  6 A. Yes.  7 Q. Okay. IARC has not determined  8 that nonasbestiform talc is -- strike that.  9 IARC has not determined that  10 there is sufficient evidence that  11 nonasbestiform talc causes ovarian cancer,  12 correct?  13 MS. O'DELL: Object to the  14 form.  15 A. In the IARC opinion on talc,  16 platy talc, what was assumed to be platy talc  17 without any fibrous contamination, the score  18 was 2B, which is possibly carcinogenic.  19 BY MS. BROWN:  20 Q. And in explaining what IARC  21 means by "possibly carcinogenic," IARC  22 explains that chance, bias or confounding  23 can't be ruled out with reasonable  24 confidence, correct?</p>
<p style="text-align: right;">Page 283</p> <p>1 they have. The most recent literature that  2 they cited is two years old.  3 BY MS. BROWN:  4 Q. And what literature do you  5 think has come out in the next -- in the last  6 two years that IARC -- excuse me, that NCI,  7 despite a publication last month, did not  8 cite?  9 A. Well, I'm going to say both the  10 Berge meta-analysis and the Penninkilampi  11 meta-analysis.  12 Q. IARC has a classification for  13 agents that it believes to be carcinogenic,  14 correct?  15 A. Yes.  16 Q. And that is a group 1, correct?  17 A. That's correct.  18 Q. And IARC has and does make a  19 determination that with some substances,  20 there is sufficient evidence of  21 carcinogenicity. True?  22 A. That's correct.  23 Q. And IARC does have a category  24 that an agent may be probably carcinogenic,</p>	<p style="text-align: right;">Page 285</p> <p>1 A. That's correct.  2 Q. And you think as it relates to  3 IARC's interpretation of epidemiology,  4 they're wrong, right?  5 MS. O'DELL: Object to the  6 form.  7 A. I think that they made the  8 decision that they thought was correct with  9 the information that they had at the time  10 that they made it.  11 BY MS. BROWN:  12 Q. At the time that IARC  13 determined that talc -- nonasbestiform talc  14 had limited evidence of carcinogenic, you  15 believe that was correct?  16 MS. O'DELL: Object to the  17 form.  18 A. I'm going to say again what I  19 said the last time. That I believe that they  20 came to that conclusion based on their review  21 of the literature that they had at the time.  22 BY MS. BROWN:  23 Q. And you understand when IARC  24 does a literature review, it employs the</p>

<p style="text-align: right;">Page 286</p> <p>1 Bradford Hill criteria?</p> <p>2 A. Yes.</p> <p>3 Q. And is that the criteria you</p> <p>4 evaluated the literature with here too?</p> <p>5 A. I actually -- I didn't know</p> <p>6 that's what I was doing until I read the</p> <p>7 Bradford Hill criteria paper myself and</p> <p>8 realized that that's what I do when I review</p> <p>9 the literature and it fit very nicely into</p> <p>10 that criteria. So in my report, yes.</p> <p>11 Q. As a practicing gynecologic</p> <p>12 oncologist, you don't use the epidemiologic</p> <p>13 tool of Bradford Hill criteria; is that fair?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. In my general practice, I don't</p> <p>17 use the Bradford Hill criteria, specifically</p> <p>18 calling it that, but all of those criteria</p> <p>19 are what I use when I evaluate something.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. And you understand that when</p> <p>22 the scientists at IARC evaluate whether or</p> <p>23 not a substance is carcinogenic, they too</p> <p>24 employ the Bradford Hill criteria, correct?</p>	<p style="text-align: right;">Page 288</p> <p>1 right?</p> <p>2 A. Yes.</p> <p>3 Q. Okay. There had been prior</p> <p>4 case-control studies in that same relative</p> <p>5 risk range, correct?</p> <p>6 A. Yes.</p> <p>7 Q. Okay. There was nothing new or</p> <p>8 different about the relative risks shown in</p> <p>9 the most recent case-control studies,</p> <p>10 correct?</p> <p>11 MS. O'DELL: Object to the</p> <p>12 form.</p> <p>13 A. There was additional -- it's</p> <p>14 just confirmation and -- of the same</p> <p>15 information, showing consistency, which is</p> <p>16 one of the tenets of the Bradford Hill</p> <p>17 criteria.</p> <p>18 BY MS. BROWN:</p> <p>19 Q. And, in fact, there's no</p> <p>20 consistency with the findings of the</p> <p>21 prospective studies, right?</p> <p>22 MS. O'DELL: Object to the</p> <p>23 form.</p> <p>24 A. The three cohort studies, I'll</p>
<p style="text-align: right;">Page 287</p> <p>1 A. Yes.</p> <p>2 Q. Okay. Is there something</p> <p>3 different in your mind, about how you</p> <p>4 employed Bradford Hill and how IARC employed</p> <p>5 Bradford Hill?</p> <p>6 A. We had different information.</p> <p>7 Q. And the different information</p> <p>8 you're referring to are some additional</p> <p>9 case-control studies and additional</p> <p>10 meta-analysis?</p> <p>11 A. And cohort studies and in</p> <p>12 inflammatory papers, causation papers that</p> <p>13 weren't published before 2007.</p> <p>14 Q. And you would agree with me</p> <p>15 that --</p> <p>16 MS. O'DELL: Excuse me,</p> <p>17 published before 2007?</p> <p>18 THE WITNESS: Were not. Were</p> <p>19 not.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. You would agree with me that</p> <p>22 the general relative risks seen in the</p> <p>23 additional case-control studies that you're</p> <p>24 referring to, range from about 1.2 to 1.6,</p>	<p style="text-align: right;">Page 289</p> <p>1 say once again, had limitations which I don't</p> <p>2 think allowed us to answer the question about</p> <p>3 talc and ovarian cancer, the size, the</p> <p>4 information about use and the follow-up.</p> <p>5 BY MS. BROWN:</p> <p>6 Q. In your review of the</p> <p>7 literature, did you make the determination</p> <p>8 that the case-control studies asked different</p> <p>9 questions about use than the prospective</p> <p>10 studies?</p> <p>11 A. The case-control studies, many</p> <p>12 of them, asked more specific questions and</p> <p>13 were able to obtain more information.</p> <p>14 Q. Is it -- you state in your</p> <p>15 report that the case-control studies are</p> <p>16 consistent, right?</p> <p>17 A. Yes.</p> <p>18 Q. And they are not -- when you</p> <p>19 look at the case-control studies and the</p> <p>20 cohort studies, though, there is not</p> <p>21 consistency, correct?</p> <p>22 MS. O'DELL: Object to the</p> <p>23 form.</p> <p>24 A. When I look at the</p>

Page 290	Page 292
<p>1 epidemiologic data as a whole, as well as all</p> <p>2 of the rest of the data about causation and</p> <p>3 the makeup and the chemicals -- the</p> <p>4 components of talcum powder product, it's</p> <p>5 all -- it's consistent to me, the weight of</p> <p>6 the evidence is consistent.</p> <p>7 BY MS. BROWN:</p> <p>8 Q. Prospective studies have not</p> <p>9 found an increased risk, correct?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. Prospective studies have</p> <p>13 limitations, which I have described multiple</p> <p>14 times, size, follow-up, length of follow-up,</p> <p>15 information about talc use. And given those</p> <p>16 caveats, they have not shown a statistical</p> <p>17 increase -- significant increase in ovarian</p> <p>18 cancer.</p> <p>19 BY MS. BROWN:</p> <p>20 Q. And you state that -- in your</p> <p>21 report at page 6, "Overall, the case-control</p> <p>22 studies are consistent showing a 30-50</p> <p>23 percent increase in risk of ovarian cancer</p> <p>24 with talcum powder use."</p>	<p>1 BY MS. BROWN:</p> <p>2 Q. One of the studies you pointed</p> <p>3 us to as a high quality study was the Wu</p> <p>4 study, right?</p> <p>5 A. Yes.</p> <p>6 Q. And one of the things that's</p> <p>7 reported in the Wu study and that you know as</p> <p>8 a practicing gynecological oncologist, is</p> <p>9 that the incident rate of ovarian cancer is</p> <p>10 much lower in African-American women than it</p> <p>11 is in Whites, correct?</p> <p>12 A. That's correct.</p> <p>13 Q. And one of the things that Wu</p> <p>14 reports is that talcum powder use is much</p> <p>15 higher in African-American women than in</p> <p>16 Whites, correct?</p> <p>17 A. That's correct.</p> <p>18 Q. And how do you reconcile those</p> <p>19 two facts, Doctor, that the population that</p> <p>20 has the highest use of talcum powder has the</p> <p>21 lowest incidence of ovarian cancer?</p> <p>22 A. Well, if we could pull up the</p> <p>23 Wu study, I don't recall how many</p> <p>24 African-American women were in that study,</p>
Page 291	Page 293
<p>1 Do you see that?</p> <p>2 A. Yes.</p> <p>3 Q. Okay. And are you referring to</p> <p>4 ever use and ovarian cancer?</p> <p>5 A. I'm referring to however it was</p> <p>6 reported in the case-control studies.</p> <p>7 Q. Have you done an analysis of</p> <p>8 the case-control studies to see what the</p> <p>9 finding is when the same question is asked?</p> <p>10 A. So I, personally, haven't.</p> <p>11 That's where I point to the meta-analysis, to</p> <p>12 look at specific questions about how -- which</p> <p>13 questions were asked.</p> <p>14 Q. And are you aware that when you</p> <p>15 look at the ever used question in the</p> <p>16 case-control studies, the majority of those</p> <p>17 studies do not show an increased risk?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 A. Which is one of the limitations</p> <p>21 of prospective studies because they only</p> <p>22 asked ever used without details about how</p> <p>23 often, how frequent, how long.</p> <p>24</p>	<p>1 but the number was, I believe, small.</p> <p>2 Q. Welt, wasn't this one of the</p> <p>3 studies you identified as being particularly</p> <p>4 high quality?</p> <p>5 A. Yes.</p> <p>6 Q. Okay.</p> <p>7 A. Just because it didn't have a</p> <p>8 lot of African-American patients doesn't make</p> <p>9 it -- doesn't make it not a good study; it's</p> <p>10 just a fact.</p> <p>11 Q. But your critique of the cohort</p> <p>12 studies is that they didn't have enough</p> <p>13 people, right?</p> <p>14 A. For a primary analysis. This</p> <p>15 is a secondary point of African-Americans.</p> <p>16 When you look at the Schildkraut study, which</p> <p>17 was specifically for African-Americans, there</p> <p>18 was a significant increase.</p> <p>19 Q. The primary focus of the Wu</p> <p>20 paper was whether African-American women had</p> <p>21 an increased risk of talcum powder use.</p> <p>22 A. This is not the right Wu paper.</p> <p>23 MS. O'DELL: Let me get it for</p> <p>24 you.</p>

Judith K. Wolf, M.D.

Page 294	Page 296
<p>1 THE WITNESS: I don't have the 2 right Wu paper. 3 MS. O'DELL: Just a second 4 here. 5 BY MS. BROWN: 6 Q. Is that what you're looking 7 for, Doctor? We can mark it. 8 A. Yes, this is the one. 9 MS. O'DELL: Thank you. 10 BY MS. BROWN: 11 Q. Let me just stick 19 on that 12 for you. 13 (Deposition Exhibit 19 marked 14 for identification.) 15 BY MS. BROWN: 16 Q. Doctor, I have marked for the 17 record as Exhibit 19, the Wu article we've 18 been discussing. And my question for you 19 here is how -- what methodology you employed 20 to reconcile some of the facts that are 21 reported in Wu; namely, that African-American 22 women had the lowest incidence of ovarian 23 cancer and the highest incidence of talcum 24 powder use?</p>	<p>1 how many were African-American. There were 2 128. 3 BY MS. BROWN: 4 Q. 1700? Are you looking at Wu? 5 A. Yes. 6 MS. O'DELL: Her testimony was 7 not -- was 128. 8 A. 128 African-Americans. 9 BY MS. BROWN: 10 Q. I misheard you. 11 A. 1700 women total. Of those, 12 128 were African-American, most of them were 13 non-Hispanic/White. So that study isn't 14 powered to answer the question about 15 African-Americans and the relationship of 16 talcum powder and ovarian cancer. It's not 17 enough. 18 Q. We're missing each other. I 19 want you to put this study aside. I'm asking 20 you a question about facts that are reported 21 here that you know as a gynecologic 22 oncologist. One of the those facts, you'll 23 agree with me, is that African-American women 24 have a lower incidence of ovarian cancer than</p>
Page 295	Page 297
<p>1 A. So the title of the Wu paper 2 says, "African-Americans and Hispanics Remain 3 at Lower Risk of Ovarian Cancer," but when 4 you read the purpose of this study, it was to 5 elucidate risk factors for disease and to 6 evaluate differences across -- across 7 Hispanics. 8 Q. Sure. 9 A. But not specifically 10 African-Americans. 11 Q. No, Doctor, I'm using the 12 information reported in this study that you 13 identified as high quality to pose a 14 commonsense question for you. Which is that, 15 how do you reconcile the idea that the 16 population that has the lowest amount of 17 ovarian cancer has the highest amount of 18 powder use? 19 MS. O'DELL: Object to the 20 form. She's answered your question 21 previously. 22 But you may respond. 23 A. So the reason I wanted to look 24 at this paper was to see, of the 1700 women,</p>	<p>1 white women, right? 2 MS. O'DELL: Object to the 3 form. 4 A. Yes. 5 BY MS. BROWN: 6 Q. Okay. And one of the things 7 you know from reading Wu, because they report 8 it, is that African-American women are 9 traditionally higher talcum powder users than 10 white women, right? 11 A. Yes. 12 Q. And so what methodology have 13 you employed in opining that talcum powder 14 causes ovarian cancer to explain this 15 difference? 16 A. Because when I look at the 17 Schildkraut study, which was a larger study 18 of African-American women, I believe, I have 19 to look at the numbers, there was a 20 statistical significant difference increase 21 in ovarian cancer in women -- 22 African-American women. 23 Q. Right. But you know the annual 24 incidence of ovarian cancer in</p>

75 (Pages 294 to 297)

<p style="text-align: right;">Page 298</p> <p>1 African-American women is historically and  2 remains much lower?  3 A. Yes.  4 MS. O'DELL: Objection, form,  5 asked and answered.  6 BY MS. BROWN:  7 Q. I mean, do you understand what  8 I'm saying here? How do you reconcile that?  9 If talcum powder use really did cause ovarian  10 cancer, why is the population that uses  11 talcum powder the most, the population that  12 gets ovarian cancer the least?  13 MS. O'DELL: Objection to the  14 form, asked and answered.  15 You may answer.  16 A. Okay. So there are multiple  17 risk factors for ovarian cancer. If  18 African-American women have some protection  19 from getting ovarian cancer, for whatever  20 reason they don't get it as often, it doesn't  21 matter what the risk factor is. If you look  22 at an individual risk factor in that  23 population alone and it increases their risk  24 over their baseline, it's a risk factor.</p>	<p style="text-align: right;">Page 300</p> <p>1 MS. BROWN: Your objection is  2 to form.  3 MS. O'DELL: Fine. I think  4 Judge Pisano would understand my  5 objection. And what I've objected to  6 is the fact that you've asked the same  7 question ten times, often with facial  8 expressions, with gestures toward the  9 witness, which is inappropriate under  10 the protocol. But I'm not being  11 critical of that. I'm pointing it out  12 for the record. So if you've got a  13 question, ask it, the doctor will  14 answer it to the best of her ability  15 as she's been doing. But to keep  16 berating the witness with the same  17 question is really not appropriate.  18 MS. BROWN: Counsel, your  19 objection under the Federal Rules is  20 to form. If there's something you'd  21 like to discuss off the record, I'd be  22 happy to do that. We need to move on  23 here. We're wasting a lot of time.  24 If Dr. Wolf would answer the question,</p>
<p style="text-align: right;">Page 299</p> <p>1 BY MS. BROWN:  2 Q. What methodology have you  3 employed to explain the fact that a  4 population that uses this product the most  5 gets ovarian cancer the least? How do you  6 reconcile that?  7 MS. O'DELL: Objection, asked  8 and answered. You've asked the same  9 question ten times. The doctor --  10 MS. BROWN: When I get an  11 answer, I'll be happy to move on.  12 MS. O'DELL: Excuse me, I'm  13 not -- you want an answer you want.  14 She's given you an answer to the  15 question.  16 MS. BROWN: Counsel, form.  17 MS. O'DELL: Let me finish.  18 MS. BROWN: But it's form.  19 Federal Rules.  20 MS. O'DELL: I can say what I'm  21 going to say.  22 MS. BROWN: Well, we can get  23 the judge.  24 MS. O'DELL: Fine.</p>	<p style="text-align: right;">Page 301</p> <p>1 I would be happy to move on.  2 MS. O'DELL: She's answered  3 your question.  4 You may answer it again --  5 BY MS. BROWN:  6 Q. Please answer it again,  7 Dr. Wolf.  8 MS. O'DELL: -- Dr. Wolf, and  9 feel free to give the same answer if  10 it's the same answer.  11 A. My understanding of your  12 question is, how do -- how do I -- given that  13 African-American women are less likely to get  14 ovarian cancer and given that they use more  15 talcum powder, why don't we see more ovarian  16 cancer from talcum powder in African-American  17 women? Is that what you're asking?  18 BY MS. BROWN:  19 Q. No, Doctor. Have you  20 considered that as a factor that your opinion  21 might not be right?  22 MS. O'DELL: Object to the  23 form.  24 A. My opinion is based on a study</p>



Judith K. Wolf, M.D.

Page 302	Page 304
<p>1 of African-American women who use or did not</p> <p>2 use talcum powder and ovarian cancer in the</p> <p>3 case-control study of Schildkraut, which was</p> <p>4 the most recent paper mentioned in the NCI</p> <p>5 update on talc and ovarian cancer.</p> <p>6 BY MS. BROWN:</p> <p>7 Q. And do you have Schildkraut in</p> <p>8 front of you? We marked it as Exhibit 19.</p> <p>9 A. I have it.</p> <p>10 Q. 15, I'm sorry. One of the</p> <p>11 things that Schildkraut attempted to address</p> <p>12 was recall bias as a result of talcum powder</p> <p>13 lawsuits, correct?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 BY MS. BROWN:</p> <p>17 Q. And I'll direct you, Doctor,</p> <p>18 to --</p> <p>19 A. Because I'm looking at the</p> <p>20 primary endpoint of the study and the primary</p> <p>21 endpoint of the study was to analyze the</p> <p>22 relationship of genital powder and nongenital</p> <p>23 powder exposure in African-American women in</p> <p>24 a case-control study of invasive ovarian</p>	<p>1 Schildkraut endeavored to do was to determine</p> <p>2 whether the class action lawsuits in 2014</p> <p>3 created recall bias in the women who were</p> <p>4 diagnosed with ovarian cancer?</p> <p>5 A. Okay.</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 BY MS. BROWN:</p> <p>9 Q. Do you recall that?</p> <p>10 A. I do.</p> <p>11 Q. And do you think that that is</p> <p>12 an important thing for an author of a</p> <p>13 case-control study to analyze?</p> <p>14 A. I do.</p> <p>15 Q. And you recall that when</p> <p>16 Schildkraut analyzed folks who had been</p> <p>17 interviewed prior to the lawsuits in 2014 and</p> <p>18 after the lawsuits in 2014, there was a</p> <p>19 significant difference in the number of</p> <p>20 people diagnosed with ovarian cancer who</p> <p>21 reported talcum powder use. Do you remember</p> <p>22 that?</p> <p>23 A. Well, I'm looking for that -- I</p> <p>24 see in the query in the table, but I don't</p>
Page 303	Page 305
<p>1 cancer -- epithelial ovarian cancer in</p> <p>2 African-American women.</p> <p>3 Q. In forming your opinions in</p> <p>4 this case, did you consider the subgroup</p> <p>5 analysis that Schildkraut conducted on women</p> <p>6 who were interviewed before and after the</p> <p>7 class action lawsuits began in 2014?</p> <p>8 MS. O'DELL: Objection to form.</p> <p>9 A. I'm looking for those results</p> <p>10 in the paper.</p> <p>11 BY MS. BROWN:</p> <p>12 Q. In forming your opinion in the</p> <p>13 case, did you consider those?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. I need to remind myself what</p> <p>17 those results were.</p> <p>18 BY MS. BROWN:</p> <p>19 Q. Okay. I'll direct you to Table</p> <p>20 2 of the paper, which in my copy is 1414.</p> <p>21 A. I see that. And what was your</p> <p>22 question?</p> <p>23 Q. Do you recall, based on your</p> <p>24 review of this paper, that one of the things</p>	<p>1 see a statistical significant difference, and</p> <p>2 that's what I'm looking for in the results,</p> <p>3 and I don't see it. If you know where it is,</p> <p>4 you can point it out to me.</p> <p>5 Q. Here's what I want to ask you</p> <p>6 about. In two thousand -- you looked at this</p> <p>7 table, right, you considered this subgroup</p> <p>8 analysis?</p> <p>9 A. Yes.</p> <p>10 Q. Because you would agree with</p> <p>11 Schildkraut, that recall bias, particularly</p> <p>12 where there's been a lot of lawsuit</p> <p>13 attention, is important to investigate,</p> <p>14 correct?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. Recall bias is always something</p> <p>18 to investigate.</p> <p>19 BY MS. BROWN:</p> <p>20 Q. But it's -- it could be</p> <p>21 particularly acute in the context of a lot of</p> <p>22 media attention due to lawsuits, right?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form.</p>

77 (Pages 302 to 305)



<p style="text-align: right;">Page 306</p> <p>1 A. Something to look at.  2 BY MS. BROWN:  3 Q. And one of the things  4 Schildkraut actually did in its analysis, was  5 it controlled for the recall bias -- it tried  6 to control for that recall bias, right?  7 A. Well, it looked at it, yes.  8 Q. And the reason it felt it had  9 to control -- he felt -- she felt she had to  10 control for it was because she found a  11 statistically significant effect modification  12 by year of interview, right?  13 MS. O'DELL: Object to the  14 form.  15 BY MS. BROWN:  16 Q. And that conclusion is at the  17 end of the results -- second paragraph of the  18 results on page 1413. Do you recall  19 reviewing that?  20 A. I don't see anything that says  21 about the year of -- year of review.  22 Q. The second paragraph in the  23 results section of the paper concludes, "A  24 test for effect modification by year of</p>	<p style="text-align: right;">Page 308</p> <p>1 A. What I'm reading, it says, "In  2 2014 and later, we observed an increase in  3 any powder use. Although increased, these  4 exposure prevalences were not statistically  5 significant for those interviewed before  6 2014."  7 BY MS. BROWN:  8 Q. Did you consider the author's  9 conclusion that there was a statistically  10 significant effect modification by year of  11 interview when you reviewed this paper?  12 MS. O'DELL: Object to the  13 form.  14 A. Yes. But -- yes, but this does  15 not clarify why that would be, because there  16 was no statistical difference in reported  17 use.  18 BY MS. BROWN:  19 Q. And what happened, Doctor, if  20 you look at Table 2, is that prior to --  21 those folks who were interviewed about  22 whether or not they had used powder before  23 2014, 34 percent of the controls reported it  24 and about 36 and a half percent of the cases</p>
<p style="text-align: right;">Page 307</p> <p>1 interview was statistically significant with  2 P equaling 0.005."  3 Do you see that?  4 MS. O'DELL: Object to the  5 form.  6 A. Okay. "Although increased,  7 exposure prevalences were not significantly  8 different from those interviewed before  9 2014."  10 So the exposure was no  11 different.  12 BY MS. BROWN:  13 Q. Well, it was and the authors  14 concluded that they couldn't rule it out as  15 inflating the odds ratios, didn't they?  16 MS. O'DELL: Objection, form.  17 A. It was not statistically  18 different.  19 BY MS. BROWN:  20 Q. They found a statistically  21 significant effect modification. Do you see  22 that conclusion?  23 MS. O'DELL: Object to the  24 form.</p>	<p style="text-align: right;">Page 309</p> <p>1 reported it, right?  2 MS. O'DELL: Object to the  3 form.  4 BY MS. BROWN:  5 Q. Do you see me --  6 A. I see that.  7 Q. And then when they stratified  8 by interview date and they asked people after  9 the lawsuits if they had used powder, the  10 folks who did not get ovarian cancer reported  11 it at about the same percentage, right, 34.4  12 percent?  13 MS. O'DELL: Object to the  14 form.  15 A. Yes, 30 and 42 percent.  16 BY MS. BROWN:  17 Q. Well, 34 and 34.4.  18 A. Oh, I'm sorry. After --  19 Q. You see that? Any genital use.  20 A. Yes.  21 Q. Okay. So 34 percent of people  22 who did not have ovarian cancer reported talc  23 use before 2014, right? And 34.4 percent of  24 people who did not have ovarian cancer</p>

Judith K. Wolf, M.D.

Page 310	Page 312
<p>1 reported talc use after 2014, right?</p> <p>2 A. Yes.</p> <p>3 Q. That's about exactly the same,</p> <p>4 correct?</p> <p>5 A. Yes. Yes.</p> <p>6 Q. But as it relates to folks who</p> <p>7 unfortunately were diagnosed with ovarian</p> <p>8 cancer, those who were asked that question</p> <p>9 before 2014, 36.5 percent of them reported</p> <p>10 talc use, right?</p> <p>11 A. (Nods head.)</p> <p>12 Q. And then that number shot up to</p> <p>13 51.5 percent after 2014, right?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. I see that.</p> <p>17 BY MS. BROWN:</p> <p>18 Q. And what the authors conclude</p> <p>19 on page 1416, is that although -- because</p> <p>20 of -- this is -- I'm reading from 1416, the</p> <p>21 first full sentence of the second column.</p> <p>22 "Because of publicity, we adjusted for date</p> <p>23 of interview. However, there is still a</p> <p>24 possibility that recall bias may have caused</p>	<p>1 correct?</p> <p>2 A. Yes.</p> <p>3 Q. And what method did you employ</p> <p>4 to assure yourself that those results were</p> <p>5 not confounded by recall bias?</p> <p>6 A. By reviewing the methods and</p> <p>7 analyzing the methods, just like we did with</p> <p>8 this paper.</p> <p>9 Q. And what did you find in the Wu</p> <p>10 article, for example, that leads you to</p> <p>11 believe that the findings were not the</p> <p>12 subject of recall bias?</p> <p>13 A. I would have to read the Wu</p> <p>14 materials and methods again. If you'd like</p> <p>15 me to, I will.</p> <p>16 Q. Well, did you undertake an</p> <p>17 analysis of the post-2014 papers with an</p> <p>18 effort to investigate whether the findings</p> <p>19 were subject to recall bias? That's my</p> <p>20 question.</p> <p>21 MS. O'DELL: Object to the</p> <p>22 form. She's answered your question.</p> <p>23 A. When I reviewed all of the</p> <p>24 papers, that was one of the things -- bias is</p>
Page 311	Page 313
<p>1 some inflation of the OR" -- or the odds</p> <p>2 ratios, correct?</p> <p>3 A. But if you read the rest of</p> <p>4 that study, "Our data do not support that</p> <p>5 recall bias alone before or after 2014 would</p> <p>6 account for the associations with body powder</p> <p>7 and epithelial ovarian cancer. It was not</p> <p>8 statistically significantly different."</p> <p>9 Q. Did you consider the author's</p> <p>10 finding as it related to recall bias in</p> <p>11 evaluating the Schildkraut paper?</p> <p>12 A. I did.</p> <p>13 Q. And would you agree that</p> <p>14 particularly given the media attention to</p> <p>15 lawsuits beginning in 2014, that recall bias</p> <p>16 is a concern of the case-control studies?</p> <p>17 A. If there was a statistically</p> <p>18 significant change and difference in change</p> <p>19 in reporting, it might -- it might be</p> <p>20 something to consider, but there was not.</p> <p>21 Q. All of the studies that you</p> <p>22 identified -- or the three studies you</p> <p>23 identified as being "high quality," were all</p> <p>24 published after the lawsuits began in 2014,</p>	<p>1 one of the things you wanted to -- I wanted</p> <p>2 to look at and I looked at. And if you're</p> <p>3 asking me specifically about this one, you</p> <p>4 know, I can read through it and tell you what</p> <p>5 it was specifically.</p> <p>6 BY MS. BROWN:</p> <p>7 Q. No, I don't need specifics of</p> <p>8 the study. I was asking for your</p> <p>9 methodology. How do you -- how -- when you</p> <p>10 evaluate a paper post-2014, how do you --</p> <p>11 what methodology do you employ to make sure</p> <p>12 that the results are not inflated by the</p> <p>13 lawsuit media attention?</p> <p>14 MS. O'DELL: Objection to form,</p> <p>15 asked and answered.</p> <p>16 A. In all of the studies, I review</p> <p>17 the methodology, I look for any evidence of</p> <p>18 bias, recall bias or anything else. Not</p> <p>19 every study compared before 2014 and after</p> <p>20 2014. This one did. They found no</p> <p>21 significant difference in recall of use.</p> <p>22 BY MS. BROWN:</p> <p>23 Q. They concluded that an</p> <p>24 inflation of the odds ratio due to recall</p>

79 (Pages 310 to 313)

<p style="text-align: right;">Page 314</p> <p>1 bias could not be ruled out. Did you  2 consider that?  3 A. When you -- when I look at  4 their methods -- that was their -- that was  5 their interpretation of the data as a  6 possible explanation. When I look at the  7 results, the results showed that there was no  8 statistically significant difference between  9 before and after 2014.  10 Q. And so as it relates to their  11 conclusion, do you discount that?  12 MS. O'DELL: Object to the  13 form.  14 A. When I read conclusions of this  15 paper or any paper, these are -- these are  16 possible explanations. It's not facts. The  17 facts are the results.  18 BY MS. BROWN:  19 Q. And did you discount the  20 statistically significant effect modification  21 by interview year and date?  22 A. No.  23 MS. O'DELL: Object to form.  24 A. That was statistically</p>	<p style="text-align: right;">Page 316</p> <p>1 in young adulthood; is that right?  2 MS. O'DELL: Object to the  3 form.  4 A. I assumed they started using  5 powder sometime after menarche.  6 BY MS. BROWN:  7 Q. Okay. And the average age of  8 menarche is 12; is that right?  9 A. I think it's ten in the US now.  10 I know.  11 Q. My gosh. Good thing I have  12 boys. You say in your report that the  13 latency period for ovarian cancer is at least  14 20 years, correct?  15 A. Yes.  16 Q. Okay. And you would agree with  17 me that most of the prospective studies  18 enrolled women in their sort of mid --  19 middle-age women to postmenopause women, so  20 women in their 40s and 50s, correct?  21 A. Yes.  22 Q. And so if those women began  23 using powder, as IARC concludes, in young  24 adulthood, they would have been approximately</p>
<p style="text-align: right;">Page 315</p> <p>1 significant.  2 BY MS. BROWN:  3 Q. You considered that?  4 A. Yes.  5 MS. BROWN: Let's take a break.  6 THE VIDEOGRAPHER: Going off  7 the record. The time is 3:24 p.m.  8 (Recess taken from 3:24 p.m. to  9 3:40 p.m.)  10 THE VIDEOGRAPHER: Back on the  11 record. The time is 3:40 p.m.  12 BY MS. BROWN:  13 Q. Dr. Wolf, in evaluating the  14 talc epidemiology, do you agree with IARC  15 that the use of talcum powder for feminine  16 hygiene is acquired in young adulthood?  17 Approximately 80 percent of the women who use  18 powder start before the age of 25? Do you  19 agree with that?  20 A. I'm going to agree with you on  21 adulthood.  22 Q. And so in evaluating the  23 epidemiology here, you assumed that most  24 folks in these studies started using powder</p>	<p style="text-align: right;">Page 317</p> <p>1 anywhere from, you know, ten- to 20- to  2 30-year users at the time they enrolled in  3 the study, correct?  4 MS. O'DELL: Object to the  5 form.  6 A. I don't think we know that for  7 sure because they weren't asked when they  8 started or how long they used it.  9 BY MS. BROWN:  10 Q. Did you consider that WHI did  11 do a subgroup analysis on women who used  12 powder for more than 20 years?  13 A. Yes.  14 Q. And what was the finding of  15 that, Doctor?  16 A. There was not a statistically  17 significant increased risk in those women.  18 Q. How did -- how does your  19 understanding of when powder use generally  20 begins in women and the latency period for  21 ovarian cancer, how does that inform your  22 critique that the prospective studies are not  23 long enough to detect ovarian cancer?  24 MS. O'DELL: Object to the</p>

Judith K. Wolf, M.D.

Page 318	Page 320
<p>1 form.</p> <p>2 A. The only thing that prospective</p> <p>3 studies looked at was one point in time, so</p> <p>4 we don't know how long. You can't -- you</p> <p>5 can't make a determination of a study based</p> <p>6 on thinking that's how long they used it.</p> <p>7 BY MS. BROWN:</p> <p>8 Q. Well, if the prospective study</p> <p>9 asked a 55-year-old if she was a talcum</p> <p>10 powder user, you would agree with me, based</p> <p>11 on your understanding of when people began</p> <p>12 using talcum powder, that she likely started</p> <p>13 in young adulthood, right?</p> <p>14 MS. O'DELL: Objection to form.</p> <p>15 A. I think the question was often</p> <p>16 ever use, and so I don't know if she started</p> <p>17 in young adulthood and did it for 20 or 30</p> <p>18 years, or she started at middle age and did</p> <p>19 it later, or she lived in the North and</p> <p>20 didn't use it and then moved to the South and</p> <p>21 started using it because she was hotter,</p> <p>22 because sweating is often a reason that</p> <p>23 people -- women give for using powder, and</p> <p>24 men. I don't know that I can infer that from</p>	<p>1 the witness has it.</p> <p>2 MS. O'DELL: Do you have the</p> <p>3 right one?</p> <p>4 THE WITNESS: I don't have</p> <p>5 page 305.</p> <p>6 MS. O'DELL: She has 100 C, not</p> <p>7 2010.</p> <p>8 THE WITNESS: I have 100 C.</p> <p>9 BY MS. BROWN:</p> <p>10 Q. Didn't we mark this?</p> <p>11 A. It's hiding. Here it is. Here</p> <p>12 it is.</p> <p>13 MS. O'DELL: Yeah, sorry,</p> <p>14 excuse me.</p> <p>15 BY MS. BROWN:</p> <p>16 Q. And so my question was, to</p> <p>17 orient you, Doctor, I'll direct you to</p> <p>18 Section B, third paragraph, the conclusion</p> <p>19 there, that, "The use of talcum powder for</p> <p>20 feminine hygiene is acquired in young</p> <p>21 adulthood, since 80 percent of women who use</p> <p>22 body powder start before the age of 25. IARC</p> <p>23 cites Harlow and Weiss from 1989."</p> <p>24 Do you agree with that?</p>
Page 319	Page 321
<p>1 the data in the study.</p> <p>2 BY MS. BROWN:</p> <p>3 Q. Well, IARC has stated that 80</p> <p>4 percent of women who use body powder start</p> <p>5 before the age of 25. Do you agree with</p> <p>6 that?</p> <p>7 MS. O'DELL: If you need to</p> <p>8 look at that study --</p> <p>9 A. Yeah, I need to look at the</p> <p>10 IARC paper.</p> <p>11 BY MS. BROWN:</p> <p>12 Q. We have marked that as</p> <p>13 Exhibit 13. And it's page 305.</p> <p>14 A. I don't see that one, because</p> <p>15 it's a thick one. It's not here.</p> <p>16 Q. Did we mark IARC --</p> <p>17 MS. O'DELL: Here we go.</p> <p>18 A. Here we go.</p> <p>19 MS. O'DELL: What page?</p> <p>20 MS. BROWN: 305.</p> <p>21 MS. O'DELL: Actually, this is</p> <p>22 the wrong one. I'm assuming you're</p> <p>23 looking at 2010?</p> <p>24 MS. BROWN: Yeah. She had --</p>	<p>1 A. Yes.</p> <p>2 Q. Okay. And you know that the</p> <p>3 Nurses Health Study enrolled women -- middle</p> <p>4 age women, correct?</p> <p>5 A. Postmenopausal women.</p> <p>6 Q. Ages 30 to 55 in 1976, and that</p> <p>7 would have been ages 36 to 61 in 1982, right?</p> <p>8 A. I thought we were talking about</p> <p>9 the Women's Health Initiative. We're talking</p> <p>10 about the Nurses Health Study?</p> <p>11 Q. Well, one question is Nurses</p> <p>12 Health. We'll go to Women's Health next.</p> <p>13 A. All right.</p> <p>14 Q. And so if most women, majority</p> <p>15 80 percent, start at age 25, many of the</p> <p>16 women enrolled in Nurses Health, for example,</p> <p>17 would have already been using talcum powder</p> <p>18 for decades prior to enrollment in that</p> <p>19 study, correct?</p> <p>20 A. I'm just adding up. So they</p> <p>21 would have been aged 36 to 61.</p> <p>22 Q. Correct.</p> <p>23 A. So some of them might have,</p> <p>24 yes.</p>

81 (Pages 318 to 321)

Page 322	Page 324
<p>1 Q. Well, at least everyone who was</p> <p>2 enrolled would have been using it for at</p> <p>3 least ten years, right?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 A. We don't know that. We're</p> <p>7 inferring from another paper where it was</p> <p>8 reported that 80 percent of women use it</p> <p>9 before age 25, that women who were asked did</p> <p>10 they ever use it had been using it their</p> <p>11 whole -- since age 25.</p> <p>12 BY MS. BROWN:</p> <p>13 Q. And in evaluating the</p> <p>14 epidemiology, did you make that conclusion?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. I didn't make that inference</p> <p>18 because it wasn't clear in the paper, that</p> <p>19 that was something that was considered or</p> <p>20 asked about how long they used it.</p> <p>21 BY MS. BROWN:</p> <p>22 Q. When you evaluated the Nurses</p> <p>23 Health Study, did you believe that the women</p> <p>24 ages 36 to 61, who were asked about talcum</p>	<p>1 BY MS. BROWN:</p> <p>2 Q. In evaluating the Women's</p> <p>3 Health Initiative data, you did consider the</p> <p>4 data that they had on folks who reported</p> <p>5 using powder for more than 20 years, right?</p> <p>6 A. Yes.</p> <p>7 Q. And you know that that resulted</p> <p>8 in a nonstatistically significant finding,</p> <p>9 correct?</p> <p>10 A. That's correct.</p> <p>11 Q. And so your critique, as it</p> <p>12 relates to the fact that the cohorts were not</p> <p>13 long enough, does not relate to the Women's</p> <p>14 Health Initiative; is that right?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. My critique does relate to the</p> <p>18 Women's Health Initiative, because even if</p> <p>19 they were using it for 20 -- more than 20</p> <p>20 years -- let me step back and say this, so</p> <p>21 that it's clear in my mind.</p> <p>22 I don't know at what point in</p> <p>23 their use that 20 years till cancer occurs</p> <p>24 starts. I don't know if it's after one dose,</p>
Page 323	Page 325
<p>1 powder use in 1982, had just begun using</p> <p>2 talcum powder?</p> <p>3 A. I don't know have any</p> <p>4 information --</p> <p>5 MS. O'DELL: Object to form.</p> <p>6 A. -- to confirm or dispute that.</p> <p>7 BY MS. BROWN:</p> <p>8 Q. Did you consider the</p> <p>9 information from IARC, that most women who</p> <p>10 use talcum powder start at age 25?</p> <p>11 MS. O'DELL: Object to the</p> <p>12 form.</p> <p>13 A. But in the Nurses Health Study,</p> <p>14 I don't have that information about when they</p> <p>15 started.</p> <p>16 BY MS. BROWN:</p> <p>17 Q. My question was, did you</p> <p>18 consider the information from IARC, that most</p> <p>19 women who use talcum powder start at age 25?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 A. And my answer is the two are</p> <p>23 not -- I can't draw a conclusion from one to</p> <p>24 the other.</p>	<p>1 if it's after a year, if it's after five</p> <p>2 years, if it's after ten years. When does</p> <p>3 that zero point go to 20 years, and I don't</p> <p>4 think there's any way we can know that.</p> <p>5 BY MS. BROWN:</p> <p>6 Q. Is what you're saying, Doctor,</p> <p>7 you don't know how much talcum powder</p> <p>8 exposure is needed to cause ovarian cancer?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. I'm saying that in an</p> <p>12 individual patient, it might take a different</p> <p>13 amount and different time for ovarian cancer</p> <p>14 to develop as a result of talcum powder use.</p> <p>15 And so even guessing when the women started</p> <p>16 doesn't give me enough information to know</p> <p>17 when that lag period started or if that lag</p> <p>18 period is 20 years or if it might be up to 40</p> <p>19 years, which is reported in some studies as</p> <p>20 how long it takes to develop cancer from a</p> <p>21 toxin.</p> <p>22 BY MS. BROWN:</p> <p>23 Q. In your opinion as a</p> <p>24 gynecologic oncology, what's the latency</p>



Page 326	Page 328
<p>1 period for ovarian cancer?</p> <p>2 A. I'm going to answer you the way</p> <p>3 I answer all of my patients. And I don't</p> <p>4 think we know for sure. The only data that</p> <p>5 we actually have that I'm aware of is the</p> <p>6 Hiroshima data, that 15 to 20 years after the</p> <p>7 atomic bomb was dropped, but when patients</p> <p>8 come to me and they say, "How long had I had</p> <p>9 this cancer? When did this cancer develop?"</p> <p>10 Well, we never sit and watch somebody from</p> <p>11 the time they have the first hint of cancer,</p> <p>12 to know how long it takes to develop, or</p> <p>13 somebody who has a precancerous lesion,</p> <p>14 although there isn't a good one for ovarian</p> <p>15 cancer, so we don't know the answer to that.</p> <p>16 Q. So in fact, Doctor, the latency</p> <p>17 period for ovarian cancer could be even</p> <p>18 shorter than 15 or 20 years?</p> <p>19 MS. O'DELL: Objection to form.</p> <p>20 A. I don't know the latency period</p> <p>21 for sure. The only data that I -- you know,</p> <p>22 that is clear is the data after the bombs,</p> <p>23 and I think, could it be shorter, could it be</p> <p>24 longer...</p>	<p>1 dose versus somebody else.</p> <p>2 For instance, the</p> <p>3 African-Americans who have, genetically, a</p> <p>4 low -- it appears a low risk of ovarian</p> <p>5 cancer, there are individual differences in</p> <p>6 patients' intrinsic risk as well as any</p> <p>7 external risks.</p> <p>8 BY MS. BROWN:</p> <p>9 Q. Were you aware of any</p> <p>10 scientific article that has attempted to</p> <p>11 quantify the latency period between first</p> <p>12 exposure to perineal use of talc and the</p> <p>13 development of ovarian cancer?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. As far as my understanding, we</p> <p>17 don't have that information. And I think</p> <p>18 from my interpretation of reading the papers,</p> <p>19 it might be hard to confirm or deny that.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. Would you agree that one of the</p> <p>22 limitations of the talc epidemiology is the</p> <p>23 self-reported nature of talcum powder use and</p> <p>24 exposure?</p>
Page 327	Page 329
<p>1 BY MS. BROWN:</p> <p>2 Q. We don't know. Fair?</p> <p>3 MS. O'DELL: Objection to form.</p> <p>4 A. I think it's variable.</p> <p>5 BY MS. BROWN:</p> <p>6 Q. Have you evaluated the</p> <p>7 case-control data and come to an opinion on</p> <p>8 the amount of time between exposure and</p> <p>9 development of ovarian cancer based on the</p> <p>10 case-control data?</p> <p>11 MS. O'DELL: Object to the</p> <p>12 form.</p> <p>13 A. So I'm going to answer the same</p> <p>14 way, in that, I'm not sure that I can, based</p> <p>15 on an individual person's response to the</p> <p>16 powder and -- the talcum powder product and</p> <p>17 dosage, to be able to say what the latency</p> <p>18 period is.</p> <p>19 If I have someone who has some</p> <p>20 other intrinsic sensitivity risk for</p> <p>21 developing ovarian cancer or risk for</p> <p>22 developing ovarian cancer if they're exposed</p> <p>23 to talcum powder product, it might not take</p> <p>24 as long; it might not take the same amount of</p>	<p>1 MS. O'DELL: Objection to form.</p> <p>2 A. Anytime there's self-reporting</p> <p>3 of anything, it's one thing to consider as a</p> <p>4 potential bias in the study.</p> <p>5 BY MS. BROWN:</p> <p>6 Q. In your review of the talc</p> <p>7 epidemiology, did you find evidence of a dose</p> <p>8 response?</p> <p>9 A. Some of the papers do show</p> <p>10 evidence of a dose response and some do not.</p> <p>11 Q. Do you agree with the FDA in</p> <p>12 its 2014 denial of the citizen's petition</p> <p>13 that dose response evidence is lacking?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. I would say that if we look at</p> <p>17 the -- many of the studies published after</p> <p>18 2014, there does appear to be a dose</p> <p>19 response, and so that information wouldn't</p> <p>20 have been available. The Wu -- the original</p> <p>21 Wu study did show a response. The Cramer</p> <p>22 study 2016, the Schildkraut study, the</p> <p>23 Penninkilampi meta-analysis all showed some</p> <p>24 hint of a dose response. They wouldn't have</p>



Page 330	Page 332
<p>1 had any of those, except the Wu. 2 BY MS. BROWN: 3 Q. And those studies did not -- 4 for example, Cramer did not show a dose 5 response with duration of use, right? 6 A. I thought they showed an 7 increase with frequency and duration of use. 8 Q. And so if you look, for 9 example, at Table 1 of Cramer, we actually 10 see a decrease in the risk after 35 years, 11 right? 12 A. Can I -- 13 Q. Absolutely. 14 A. Is that one of the exhibits? 15 Because it's not in there. 16 Q. Right. 17 A. Or I can't find it. 18 Q. We marked it as 11. 19 A. Yeah. 20 MS. O'DELL: Here we go. 21 A. Years used. So I'm looking at 22 Table 1. Is that what you're looking at? 23 BY MS. BROWN: 24 Q. Right. If you look at the</p>	<p>1 frequency, if you look at Table 1 continued 2 on the very next page, there was -- while 3 there was an increase of use up to 7200 4 applications, after 7200 applications, the 5 use decreased, right? 6 MS. O'DELL: Object to the 7 form. 8 A. No, the top part of that, it 9 goes up, it goes down, it goes back up. The 10 bottom part of that -- the last part of that 11 table is assuming 12 months per year 12 missing -- these are people with missing 13 months. 14 BY MS. BROWN: 15 Q. And so you agree there's not a 16 linear increase in frequency of application, 17 correct? 18 A. In this paper, there's not a 19 linear increase, but there is an increase 20 with more frequent application. And I want 21 to say, again, and I think I've said this 22 earlier, is that what's a dose? Frequency of 23 use, in my head, I can't get my head around, 24 is it the same amount every time? There</p>
Page 331	Page 333
<p>1 years used, you'd agree with me that there's 2 actually a slight decreased risk after 35 3 years of use? 4 A. But there's an increased risk 5 between 8 and 20, up to 35, and all of those 6 are fairly similar. 7 Q. And what Cramer himself 8 includes -- concludes, is that the trend for 9 years used was flat, right? 10 A. Yes. 11 Q. So what he did not find was 12 that the longer you used talcum powder, a 13 significant increase in your risk of ovarian 14 cancer, correct? 15 MS. O'DELL: Object to the 16 form. 17 A. The more frequently you used 18 it, an increase. 19 BY MS. BROWN: 20 Q. Right. But as to the number of 21 years, he did not find any dose response, 22 correct? 23 A. That's correct. 24 Q. And even to be fair as to the</p>	<p>1 isn't -- it's not like it's a 5-milligram 2 pill. It's powder in your panties. And to 3 look at any of this data and try to 4 equivocate dose, I think it's challenging. 5 Q. One of the things you say in 6 your report is, given those challenges, the 7 evaluation of a dose response was not as 8 important to your analysis; is that right? 9 A. Yes. 10 MS. O'DELL: Object to form. 11 BY MS. BROWN: 12 Q. And what -- and that's 13 different than the Bradford Hill criteria, 14 right? 15 MS. O'DELL: Object to the 16 form. 17 A. That's one of the tenets of the 18 Bradford Hill. It's not the only one. 19 BY MS. BROWN: 20 Q. Right. But in your analysis, 21 you determined that that factor of the 22 Bradford Hill was less important, correct? 23 A. Because it's hard to 24 quantitate, as I just stated, what's a dose.</p>

Page 334	Page 336
<p>1 Even if you know for sure how many times 2 someone used talcum powder, you don't know 3 what dose they used and where it went. Did 4 it go all in their panties? Did it go on the 5 floor? Did it go in their groins? Did go 6 it up their backside? How much did they use? 7 None of these papers attempted 8 to and understandably it's hard to quantitate 9 how much is a dose. And so given that it's 10 challenging to answer the question about dose 11 response, it's hard to put a lot of weight on 12 that. 13 Q. And what you say in your report 14 at page 15, is that given the limitations of 15 the data, and those would be the limitations 16 you just described, right? 17 A. Yes. 18 MS. O'DELL: Objection to form. 19 BY MS. BROWN: 20 Q. And what that means is that 21 this product, the use of this product is 22 difficult to quantify, correct? 23 MS. O'DELL: Object to the 24 form.</p>	<p>1 their -- all of those things are hard to 2 quantify. 3 BY MS. BROWN: 4 Q. Is there any scientific data 5 that you are aware of that shows a particular 6 percentage of perineal powder reaching the 7 ovary? 8 A. I'm not aware that there's any 9 data that's ever looked at that. 10 Q. For purposes of your opinion, 11 however, you have assumed that some amount of 12 the powder that's applied perineally reaches 13 the ovary; is that right? 14 MS. O'DELL: Object to the 15 form. 16 A. I assume that there's migration 17 of talc particles through the open genital 18 tract to get to the ovary. 19 BY MS. BROWN: 20 Q. And for your opinion to hold 21 true, that talcum powder that reaches the 22 ovary causes ovarian cancer, is there a 23 particular amount of talcum powder in your 24 mind that needs to reach the ovary?</p>
Page 335	Page 337
<p>1 A. The dose of using this product 2 is difficult to quantify. 3 BY MS. BROWN: 4 Q. Right. And when you say "the 5 dose is difficult to quantify," that just -- 6 you're referring to just the dose that 7 somebody puts on their perineum or on their 8 underwear, right? 9 MS. O'DELL: Object to form. 10 A. Their exposure dose, I'm 11 referring to now -- wherever they put it on 12 their perineum. 13 BY MS. BROWN: 14 Q. So are you -- would you agree 15 that both the amount that they used is 16 difficult to quantify? Fair? 17 A. Yes. 18 Q. As well as the amount that 19 actually reaches the ovary, right? 20 MS. O'DELL: Object to the 21 form. 22 A. The amount they used, the 23 amount that reaches the ovary, their own body 24 sensitivity to whatever amount reaches</p>	<p>1 MS. O'DELL: Objection to form. 2 A. I think -- I have no idea what 3 that amount would be and I don't know that 4 that amount is the same for everyone. 5 BY MS. BROWN: 6 Q. Is there any scientific 7 literature on which you rely that establishes 8 that individuals are susceptible to talcum 9 powder in a different way? 10 A. Individuals are susceptible to 11 all cancer risk factors in a different way. 12 Everyone who has a BRC1 mutation doesn't get 13 ovarian cancer. Everyone who has a lynch 14 syndrome mutation doesn't get colon cancer. 15 There are individual differences in risk 16 factors. And everyone who uses 17 postmenopausal hormones doesn't get ovarian 18 cancer or breast cancer. So there are 19 individual differences. Everybody's made up 20 differently, has a different immune response. 21 So it only makes sense to me that if it's 22 different in every other circumstance, it's 23 going to be different in talcum powder use 24 exposure.</p>

Judith K. Wolf, M.D.

Page 338	Page 340
<p>1 Q. Based on your review of the 2 epidemiology, is it your opinion that 3 individuals are put at risk for ovarian 4 cancer through perineal exposure more likely 5 than through inhalation of genital talcum 6 powder? 7 MS. O'DELL: Object to the 8 form. 9 A. In my review of the 10 epidemiology, all of the studies are 11 particularly looking at perineal exposure. 12 So through -- through that lens, I believe 13 that most of the information in those studies 14 is looking at that particular question, 15 perineal exposure, not necessarily 16 inhalation. 17 BY MS. BROWN: 18 Q. When you're evaluating a 19 patient for a suspected ovarian cancer, do 20 you inquire about any markers of asbestos 21 exposure, like pleural plaques or 22 mesothelioma or anything like that, 23 interstitial fibrosis? 24 A. Do I inquire about them? Do</p>	<p>1 or may not be related to the patient's 2 cancer. 3 Q. Have you -- in connection with 4 that opinion, Dr. Wolf, have you evaluated 5 the epidemiology on the miners and millers of 6 cosmetic talcum powder? 7 A. I believe that's in the IARC 8 paper or study. 9 Q. You recall that IARC points to 10 that as some of the best evidence, that 11 inhalation of nonasbestiform talc is not 12 carcinogenic? 13 MS. O'DELL: Object to the 14 form. 15 A. I don't recall that specific 16 conclusion. I'd have to look at it again. 17 So are we talking about IARC 10? Which one 18 are you -- 19 BY MS. BROWN: 20 Q. I'm just asking if you recall 21 and if you considered that conclusion? 22 MS. O'DELL: Could you repeat 23 the question, please? 24</p>
Page 339	Page 341
<p>1 you mean do I investigate -- 2 Q. Yes. 3 A. -- if they have any of those, 4 yes. 5 Q. Do you believe that if talcum 6 powder was contaminated with asbestos, that 7 it would be causing asbestos-related 8 diseases, like mesothelioma? 9 MS. O'DELL: Object to the 10 form. 11 A. Do I believe that if talcum 12 powder is contaminated with asbestos, would 13 it cause mesothelioma? 14 BY MS. BROWN: 15 Q. Uh-huh. 16 A. That's your question? I do 17 believe that talcum powder is contaminated 18 with asbestos and I believe that it causes -- 19 it can increase the risk of both mesothelioma 20 of the ovary and epithelial ovarian cancer. 21 And I'm investigating for any signs of 22 abnormality in the chest, I'm looking for any 23 abnormalities, evidence of mesothelioma or 24 any other abnormalities in the chest that may</p>	<p>1 BY MS. BROWN: 2 Q. Do you recall and did you 3 consider IARC's conclusion, that some of the 4 best epidemiology as it relates to inhalation 5 of a nonasbestiform talc, is the miners and 6 the millers of cosmetic talc? 7 A. I do recall that. 8 Q. Does that make sense to you as 9 a gynecologic oncologist, that one of the 10 best places to look in the epi world would be 11 the folks who are exposed to inhalation the 12 most? 13 MS. O'DELL: Object to the 14 form. 15 A. It makes sense to look at a 16 group of people who are going to be exposed. 17 BY MS. BROWN: 18 Q. And in concluding, as you have 19 done here today, Doctor, that cosmetic talcum 20 powder is contaminated with asbestos, how, if 21 at all, did you consider the results of the 22 miners and miller studies that IARC points to 23 as some of the best evidence? 24 MS. O'DELL: Object to the</p>

86 (Pages 338 to 341)

<p style="text-align: right;">Page 342</p> <p>1 form, asked and answered.  2 A. So I'm not sure what you're  3 asking. What I believe I'm hearing is,  4 you're asking if there's asbestos in talcum  5 powder, why don't miners and millers get  6 ovarian cancer?  7 BY MS. BROWN:  8 Q. Exactly. Have you considered  9 the fact that that epidemiology shows no  10 mesothelioma?  11 MS. O'DELL: Object to the  12 form.  13 A. That's a different question,  14 because I'm not talking about mesothelioma.  15 I'm talking about epithelial ovarian cancer.  16 BY MS. BROWN:  17 Q. And a second ago I asked you if  18 you thought that talc was contaminated with  19 asbestos and people were really breathing it  20 in, shouldn't it be causing mesothelioma in  21 women? And I thought your testimony was yes.  22 MS. O'DELL: Object to the  23 form.  24 A. No, you asked me do I</p>	<p style="text-align: right;">Page 344</p> <p>1 there's a lot of abnormalities in the lung  2 from breathing in talcum powder. And I'm  3 losing myself because I'm not sure of the  4 question again. Should -- can you -- let me  5 tell you what I think you're asking me.  6 BY MS. BROWN:  7 Q. Why don't I just rephrase the  8 question and try to do this bit by bit.  9 A. Okay.  10 Q. You would agree that  11 mesothelioma is a disease that is often  12 caused by asbestos exposure?  13 A. Yes.  14 Q. Some people refer to it as a  15 signature asbestos-related disease, correct?  16 MS. O'DELL: If you know.  17 A. I don't know that term  18 "signature." That's not something that --  19 BY MS. BROWN:  20 Q. And you have offered the  21 opinion here today that talcum powder is  22 contaminated with asbestos, right?  23 A. Yes.  24 Q. And you have offered the</p>
<p style="text-align: right;">Page 343</p> <p>1 investigate if women who I think might have  2 ovarian cancer might have abnormalities in  3 the chest, including abnormalities associated  4 with mesothelioma, and I said, yes, I do,  5 because women with ovarian cancer often have  6 abnormalities in the chest. Usually if they  7 do, it's from their ovarian cancer, but  8 certainly I'm looking at any other potential  9 cause.  10 BY MS. BROWN:  11 Q. Understood. Bad question on my  12 part. We're missing each other. If -- you  13 hold the opinion that talcum powder is  14 contaminated with asbestos. And my question  15 is, if that were true, shouldn't we be seeing  16 mesothelioma in the miners and the millers of  17 cosmetic talcum powder?  18 MS. O'DELL: Object to the  19 form.  20 A. I'm not sure how to answer  21 that, because I think that talcum powder has  22 multiple components that could cause cancer.  23 Is it only the asbestos that could be --  24 certainly, in people who work in mines,</p>	<p style="text-align: right;">Page 345</p> <p>1 opinion that perineal use of talcum powder  2 could reach the ovaries via inhalation,  3 correct?  4 A. Yes.  5 Q. And so my question to you is,  6 if talcum powder is really contaminated with  7 asbestos and if women who use it perineally  8 really do inhale it, shouldn't they be  9 getting asbestos-related diseases like  10 mesothelioma?  11 MS. O'DELL: Object to the  12 form.  13 A. I'm going to say that they  14 might.  15 BY MS. BROWN:  16 Q. And in forming that opinion,  17 have you considered the epidemiology on the  18 miners and millers of cosmetic talcum powder?  19 A. Yes. That we just talked  20 about.  21 Q. Okay. And those studies show  22 that the folks with the highest, highest  23 exposure to cosmetic talcum powder via  24 inhalation, don't get mesothelioma, right?</p>

Page 346	Page 348
<p>1 MS. O'DELL: Object to the 2 form. 3 THE WITNESS: Are you just 4 objecting? 5 MS. O'DELL: Yes. 6 THE WITNESS: I wasn't sure if 7 I was supposed to answer or not. 8 A. In that study, those patients 9 did not get mesothelioma. So again, the 10 question is, might talcum powder applied 11 perineally cause ovarian cancer by -- via an 12 inhalation route? Yes, I think that could 13 happen. Do I think those people should be 14 getting mesothelioma, because I have evidence 15 that that talcum powder is contaminated with 16 mesothelioma? I don't know. Maybe. 17 BY MS. BROWN: 18 Q. Did you look, in evaluating the 19 occupational studies that IARC relies on in 20 concluding that heavy occupational exposure 21 to asbestos causes ovarian cancer, did you 22 look at how the relative risks for ovarian 23 cancer in those studies compared to the 24 relative risks for mesothelioma?</p>	<p>1 BY MS. BROWN: 2 Q. Does your current institution, 3 the Community Health Practice, does it advise 4 women that perineal use of talcum powder 5 causes ovarian cancer? 6 A. So in my practice, it's me, a 7 physician's assistant and a nurse 8 practitioner and one other GYN oncologist. I 9 do, my physician's assistant does, my nurse 10 practitioner does. I don't know about my 11 partner. 12 Q. And we talked a little bit 13 earlier about when you started that practice. 14 Do you recall when you started telling 15 patients your belief that talcum powder use 16 causes ovarian cancer? 17 A. I started asking my patients 18 about their use and telling them to stop or 19 not use it once I started reviewing all of 20 the literature and formed my opinion. 21 Q. You made a motion, all the 22 literature that's in front of you, right? 23 A. Yes. 24 Q. So you --</p>
Page 347	Page 349
<p>1 A. Yes. 2 Q. And what was the conclusion 3 there, Doctor? 4 A. The relative risks of 5 mesothelioma is higher. 6 Q. By how much? 7 A. I can't remember. A lot. 8 Q. Okay. So do you recall seeing 9 relative risks for ovarian cancers in the 1.5 10 to 2.5 range? 11 A. Yeah. 12 Q. And for mesothelioma in the 40 13 range? 14 A. Yes. 15 Q. And so if someone is truly 16 exposed to heavy amounts of asbestos through 17 inhalation, they -- based on that data that 18 IARC considered, they're far more likely to 19 get mesothelioma than ovarian cancer, right? 20 MS. O'DELL: Object to the 21 form. 22 A. If people are exposed to heavy 23 doses of asbestos, they're more likely to get 24 mesothelioma than ovarian cancer, yes.</p>	<p>1 MS. O'DELL: Which is not just 2 in front of you, but we're talking 3 about what's on the side table as 4 well. 5 THE WITNESS: Yes. 6 MS. BROWN: Fair. 7 BY MS. BROWN: 8 Q. So to be clear, you started the 9 practice of asking patients if they used 10 talcum powder after you had undertaken review 11 of the literature in connection with your 12 expert work, correct? 13 MS. O'DELL: Object to the 14 form. 15 A. After I undertook review of the 16 literature. 17 BY MS. BROWN: 18 Q. And I understand that you 19 undertook a review of the literature in 20 connection with your expert work, right? 21 A. That's when I read all of the 22 literature -- began reading all of the 23 literature. I was aware of some of the data, 24 but when I began reviewing all of the</p>



Judith K. Wolf, M.D.

Page 350	Page 352
<p>1 literature, yes.</p> <p>2 Q. Okay. And so prior to that</p> <p>3 time, it was not your practice to ask</p> <p>4 patients whether or not they used talcum</p> <p>5 powder, correct?</p> <p>6 A. Not as a routine. However, if</p> <p>7 I saw somebody who, when I examined them,</p> <p>8 obviously was using talcum powder, I</p> <p>9 recommended they not use it. They stop.</p> <p>10 Q. Do you agree, Doctor, that much</p> <p>11 about ovarian cancer is shrouded in mystery,</p> <p>12 from causes to early detection to effective</p> <p>13 treatments?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. I would not agree with that</p> <p>17 statement.</p> <p>18 BY MS. BROWN:</p> <p>19 Q. Let's mark this as Exhibit 20.</p> <p>20 (Deposition Exhibit 20 marked</p> <p>21 for identification.)</p> <p>22 BY MS. BROWN:</p> <p>23 Q. Handing you, Doctor, an article</p> <p>24 entitled "The Future of Ovarian Cancer</p>	<p>1 Right?</p> <p>2 A. Yes.</p> <p>3 Q. And as of November 2015, that</p> <p>4 was information that you signed off on,</p> <p>5 correct?</p> <p>6 A. Yes.</p> <p>7 Q. Okay. And so as of</p> <p>8 November 2015, you do not believe that one of</p> <p>9 the well-known causes of ovarian cancer is</p> <p>10 talcum powder use. True?</p> <p>11 A. I can't remember the time. I</p> <p>12 can tell you that this was used as part of</p> <p>13 patient information in relationship to the</p> <p>14 company that I was working, and the point of</p> <p>15 this was not to talk about risk factors. It</p> <p>16 was to talk about the importance of diagnosis</p> <p>17 and informing women, the general lay</p> <p>18 population, about getting to a gynecologic</p> <p>19 oncologist if they had a pelvic mass.</p> <p>20 Q. The information contained in</p> <p>21 Exhibit 20 was meant for patients who --</p> <p>22 A. For women.</p> <p>23 Q. For women.</p> <p>24 A. For women.</p>
Page 351	Page 353
<p>1 Diagnosis is Now - Through These 4</p> <p>2 strategies," by Judy Wolf, November 11th,</p> <p>3 2015. Is this an article that you wrote,</p> <p>4 Doctor? First of all, is that your picture</p> <p>5 next to Judy Wolf on the first page?</p> <p>6 A. It is.</p> <p>7 Q. Okay. And this article, dated</p> <p>8 November 11th, 2015, has your byline and</p> <p>9 picture, right?</p> <p>10 A. It does.</p> <p>11 Q. Okay. And do you recall,</p> <p>12 during the time period that you were in the</p> <p>13 private sector, authoring a number of</p> <p>14 articles that were posted on a website called</p> <p>15 nopelvicmass.com?</p> <p>16 A. Yes.</p> <p>17 Q. And was this one of those</p> <p>18 articles potentially?</p> <p>19 A. Yes. Yes.</p> <p>20 Q. Okay. And as we just -- as I</p> <p>21 just read, the article that has your picture</p> <p>22 and name on it says, "So much about ovarian</p> <p>23 cancer is shrouded in mystery, from causes to</p> <p>24 early detection to effective treatments."</p>	<p>1 Q. Okay. And certainly as a</p> <p>2 doctor, as a gynecologic oncologist, you</p> <p>3 think it's important to be truthful with</p> <p>4 women when you write about issues concerning</p> <p>5 women's health, right?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. I don't see anything on here</p> <p>9 that was -- is untruthful.</p> <p>10 BY MS. BROWN:</p> <p>11 Q. I'm not suggesting that. I was</p> <p>12 just asking you, that when you write, as you</p> <p>13 do often, information about women's health,</p> <p>14 you'd agree it's important to be truthful?</p> <p>15 A. Yes.</p> <p>16 Q. Because the intended recipient</p> <p>17 of your writing are women who have or may</p> <p>18 have ovarian cancer, right?</p> <p>19 A. Yes.</p> <p>20 (Deposition Exhibit 21 marked</p> <p>21 for identification.)</p> <p>22 BY MS. BROWN:</p> <p>23 Q. I'm handing you, Doctor, what</p> <p>24 we have marked as Exhibit 21 to your</p>

89 (Pages 350 to 353)



Page 354	Page 356
<p>1 deposition. This is another article with</p> <p>2 your name and picture, entitled "How to find</p> <p>3 the best doctor for ovarian cancer." Do you</p> <p>4 recall writing this article?</p> <p>5 A. Not specifically, but I know I</p> <p>6 did a lot of these while I was working at</p> <p>7 Vermillion.</p> <p>8 Q. Okay. And just to close the</p> <p>9 loop, Exhibit 20, even though you don't</p> <p>10 necessarily recall writing it, you don't</p> <p>11 dispute this is something that you did write,</p> <p>12 correct?</p> <p>13 A. I'm not disputing that.</p> <p>14 Q. Okay. And the same for</p> <p>15 Exhibit 21, you don't dispute that this</p> <p>16 article is something you wrote in December of</p> <p>17 2015?</p> <p>18 A. That's correct.</p> <p>19 Q. Okay. And this, again, was an</p> <p>20 article aimed at folks who -- women who may</p> <p>21 be concerned about ovarian cancer, correct?</p> <p>22 A. Yes.</p> <p>23 Q. And one of the things you did</p> <p>24 in this article was to identify risk factors</p>	<p>1 ovarian cancer, right?</p> <p>2 A. Yes.</p> <p>3 Q. And then the fourth is close</p> <p>4 relatives with a history of breast cancer or</p> <p>5 ovarian cancer at any age, right?</p> <p>6 A. Yes.</p> <p>7 Q. And then the fourth and fifth</p> <p>8 have to do with the Ashkenazi Jewish</p> <p>9 heritage, correct?</p> <p>10 A. Yes.</p> <p>11 Q. And one of the things you did</p> <p>12 not list in December of 2015 as a risk factor</p> <p>13 for ovarian cancer, was genital use of talcum</p> <p>14 powder, correct?</p> <p>15 A. I did not use -- list any</p> <p>16 nonhereditary risk.</p> <p>17 Q. And that would include talcum</p> <p>18 powder, correct?</p> <p>19 A. Including talcum powder,</p> <p>20 endometriosis, obesity, any hormonal</p> <p>21 replacement.</p> <p>22 Q. Sorry. Are you done?</p> <p>23 A. I'm done.</p> <p>24 Q. And that's in part, Doctor,</p>
Page 355	Page 357
<p>1 for ovarian cancer. True?</p> <p>2 A. All listed here are familial</p> <p>3 risk factors.</p> <p>4 Q. And the title of the section</p> <p>5 you have in this -- well, first, you say,</p> <p>6 "What are the odds," right? The odds of</p> <p>7 getting ovarian cancer, right? And you say</p> <p>8 one place to start is by considering your</p> <p>9 risk factors. True?</p> <p>10 A. Yes.</p> <p>11 Q. All right. And then you state,</p> <p>12 "You're more likely to be at risk of ovarian</p> <p>13 cancer if" -- and then you have a number of</p> <p>14 bullets, correct?</p> <p>15 A. Yes. And all of those bullets</p> <p>16 relate to genetic risk.</p> <p>17 Q. Exactly. And so the first</p> <p>18 deals with a first-degree relative, right?</p> <p>19 A. Yes.</p> <p>20 Q. The second is a prior history</p> <p>21 of breast cancer, correct?</p> <p>22 A. Yes.</p> <p>23 Q. The third is a prior history of</p> <p>24 breast cancer and a relative with breast or</p>	<p>1 because in December of 2015, you had not</p> <p>2 formed the opinion that genital use of talcum</p> <p>3 powder causes ovarian cancer. True?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 A. That was prior to my doing any</p> <p>7 of the review of all the literature.</p> <p>8 BY MS. BROWN:</p> <p>9 Q. Right. And so at the time of</p> <p>10 these articles, that Exhibit 20 and 21, you</p> <p>11 did not hold the opinion that talcum powder</p> <p>12 use perineally causes ovarian cancer,</p> <p>13 correct?</p> <p>14 A. I wasn't convinced, as I am</p> <p>15 today.</p> <p>16 Q. Have you done any prior expert</p> <p>17 work, Dr. Wolf?</p> <p>18 A. No.</p> <p>19 Q. Have you reviewed any</p> <p>20 individual plaintiff cases who are suing in</p> <p>21 the talcum powder litigation?</p> <p>22 A. No.</p> <p>23 Q. Okay. Has the extent of your</p> <p>24 involvement in the talcum powder litigation</p>

<p style="text-align: right;">Page 358</p> <p>1 related to the report that we've been  2 discussing today?  3 A. Yes.  4 Q. Okay. And in total, does it  5 sound about right to you, you've charged the  6 plaintiffs' lawyers for about 83 hours in  7 connection with your work?  8 A. That seems about right.  9 Q. And your rate is \$600 an  10 hour --  11 A. Yes.  12 Q. -- is that correct? And how  13 did you come up with that rate?  14 A. I asked -- I asked my friend  15 Ali, what do people usually charge for this  16 kind of thing, and then I kind of picked a  17 rate in -- what I felt like was in the  18 middle.  19 Q. And so if I wanted to know how  20 much money the plaintiffs' lawyers have paid  21 you in total for your work in the talc  22 litigation, I could multiply 600 by 83 and  23 that should be about right?  24 A. That should be about right.</p>	<p style="text-align: right;">Page 360</p> <p>1 report and the references and write a review  2 paper and submit it for publication.  3 Q. Have you done any work to that  4 end yet, Doctor?  5 A. I haven't.  6 Q. Do have you have any journals  7 in mind where you intend to submit that  8 review?  9 A. I haven't decided for sure yet.  10 The journals that I read the most and most  11 GYN oncologists read, are the GYN Oncology,  12 the Journal of Clinical Oncology, The Gray  13 Journal, the ACOG journal, which is called  14 The Green Journal. So I would probably  15 choose one of those because clinicians read  16 them.  17 Q. Are you a member of ACOG?  18 A. I am.  19 Q. And are you a member of SGO?  20 A. I am.  21 Q. And in forming your opinions in  22 this case, did you consider the risk factors  23 that ACOG and SGO recognize for ovarian  24 cancer?</p>
<p style="text-align: right;">Page 359</p> <p>1 Q. Do you have any additional  2 plans to do additional expert work for the  3 plaintiffs in the talc litigation?  4 A. I mean, completing out whatever  5 happens with this case.  6 Q. Other than what we're here  7 about today, right?  8 A. That's -- that's all I have  9 planned.  10 Q. Do you have a website in  11 connection with your current practice?  12 A. I do.  13 Q. And do you indicate on your  14 website that talcum powder causes ovarian  15 cancer?  16 A. I don't believe I talk about  17 any risk -- specific risk factors for ovarian  18 cancer. That website is to introduce  19 patients to who I am and how I like to  20 practice.  21 Q. Do you have any plans to  22 publicize your belief that talcum powder  23 causes ovarian cancer?  24 A. I actually do plan to take my</p>	<p style="text-align: right;">Page 361</p> <p>1 A. Yes.  2 Q. And are you aware that in their  3 patient-facing websites, as well as any of  4 their publicly related information about  5 ovarian cancer, neither SGO nor ACOG  6 identifies perineal use of talcum powder as a  7 risk factor for ovarian cancer?  8 A. I am aware of that.  9 Q. And do you believe that the  10 doctors and the scientists at SGO and ACOG  11 simply have not reviewed all of the data  12 regarding perineal use of talcum powder and  13 ovarian cancer?  14 A. It's my understanding that most  15 of the GYN oncologists probably have not  16 reviewed the literature to the extent of  17 which I have reviewed it. And given that the  18 volume of literature has increased recently,  19 it takes time for societies like SGO and ACOG  20 to come up with an opinion. It has to go  21 through a committee and various steps to come  22 out. I don't think this is something that's  23 risen to their attention enough. That's part  24 of the reason that I want to write a paper</p>

<p style="text-align: right;">Page 362</p> <p>1 about it, to help inform my colleagues.  2 Q. Have you contacted anyone at  3 ACOG or SGO and told them that you think they  4 need to update their website and list that  5 talcum powder causes ovarian cancer?  6 A. I haven't yet.  7 Q. Do you intend to do that?  8 A. I intend to write a letter to  9 SGO with my concerns, asking them to review  10 it. I think that's the first step, is they  11 have to review the literature on their own.  12 Q. And you have been doing this  13 talcum powder work for the plaintiffs'  14 lawyers for a little over a year now; is that  15 right?  16 A. Yes.  17 Q. And during that time period,  18 you haven't contacted any of your  19 professional organizations to inform them of  20 your view that talc causes ovarian cancer?  21 MS. O'DELL: Object to the  22 form.  23 A. I have talked to individual  24 colleagues who practice GYN oncology, and I</p>	<p style="text-align: right;">Page 364</p> <p>1 BY MS. BROWN:  2 Q. Okay. And it sounds like you  3 nonetheless, have raised the issue with some  4 folks at the coalition, correct?  5 A. Yes.  6 Q. And it sounds like they don't  7 agree with your assessment, correct?  8 MS. O'DELL: Object to the  9 form.  10 A. The last time I raised it,  11 which was in the spring, at the meeting that  12 is in conjunction with the Society of GYN  13 Oncology, they didn't want to address it,  14 they didn't want to take it on as something  15 to review.  16 BY MS. BROWN:  17 Q. But do you think, generally,  18 the doctors and the scientists at  19 organizations like ACOG and SGO and the  20 National Ovarian Cancer Coalition are working  21 very hard to protect women's health issues?  22 MS. O'DELL: Object to the  23 form.  24 A. I think that all of those</p>
<p style="text-align: right;">Page 363</p> <p>1 have talked to the National Ovarian Cancer  2 Coalition Medical Advisory Board, of which  3 I'm on the board. I used to be on the  4 advisory board. And at the time that I  5 raised it, there wasn't a lot of interest in  6 pursuing it.  7 BY MS. BROWN:  8 Q. And so one of the organizations  9 you referenced and to your credit have done a  10 lot of work with, is the National Ovarian  11 Cancer Coalition, right?  12 A. Yes.  13 Q. And as you well know, as  14 someone who's been very active in that  15 organization, they too have a statement on  16 talcum powder, right?  17 A. Yes.  18 Q. And the National Ovarian Cancer  19 Coalition does not believe that the evidence  20 supports that talcum powder causes ovarian  21 cancer, right?  22 MS. O'DELL: Object to form.  23 A. That's what their statement  24 says.</p>	<p style="text-align: right;">Page 365</p> <p>1 societies and many other advocacy groups are  2 doing what they think is best to protect  3 women's health.  4 BY MS. BROWN:  5 Q. Have you considered the  6 possibility that these folks at ACOG, at SGO,  7 at NCI, at FDA, at IARC have reviewed the  8 same data that you have and come to a  9 different conclusion?  10 MS. O'DELL: Object to the  11 form.  12 A. I don't have all of the  13 information about what they've reviewed or  14 not reviewed. And some of those, I know that  15 they didn't have all of the data and some of  16 them, like the National Ovarian Cancer  17 Coalition, I know they haven't reviewed the  18 data. I don't know that SGO has done that at  19 any time recently. If you go to their  20 website, they refer you to ACOG. So I can't  21 make that statement.  22 BY MS. BROWN:  23 Q. You don't have those -- sitting  24 here as someone who's been active in the</p>

Page 366	Page 368
<p>1 women's health field for almost 30 years, you</p> <p>2 don't have any reason to believe that the</p> <p>3 folks at ACOG, SGO, FDA, NCI, CDC have not</p> <p>4 kept up-to-date with the talc and ovarian</p> <p>5 cancer epidemiology?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form, misstates her testimony, assumes</p> <p>8 things not in the record.</p> <p>9 A. My assumption is that some</p> <p>10 people in all of those have probably read</p> <p>11 some of the data. I'm not sure who, if</p> <p>12 anyone, in any of those has looked at all of</p> <p>13 the evidence in the way that I have done.</p> <p>14 BY MS. BROWN:</p> <p>15 Q. And the way that you've looked</p> <p>16 at the evidence is by using sort of your</p> <p>17 interpretation of Bradford Hill; is that</p> <p>18 right?</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 A. I would say evidence-based</p> <p>22 medicine and then using the tenets of</p> <p>23 Bradford Hill to explain how I interpreted</p> <p>24 the data that I reviewed.</p>	<p>1 A. Because there's limitations in</p> <p>2 the data that we'll never know the answer to.</p> <p>3 Q. And as it relates to strength</p> <p>4 of the association, in your review of the</p> <p>5 data, what is the relative risk associated</p> <p>6 with talcum powder use and ovarian cancer?</p> <p>7 MS. O'DELL: Object to the</p> <p>8 form.</p> <p>9 A. The overall -- looking at the</p> <p>10 studies as a whole, 1.3 to 1.4 odds ratio.</p> <p>11 BY MS. BROWN:</p> <p>12 Q. And do you consider that to be</p> <p>13 a strong association?</p> <p>14 A. I consider it to be a</p> <p>15 consistent, reliable association. It doesn't</p> <p>16 have to be a high number, and Bradford Hill</p> <p>17 explains that in FedEx paper, that it's the</p> <p>18 consistent association and finding that</p> <p>19 association. It doesn't have -- it's not</p> <p>20 number dependent.</p> <p>21 Q. You'd agree that 1.3 and 1.4 is</p> <p>22 not a high relative risk?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form.</p>
Page 367	Page 369
<p>1 BY MS. BROWN:</p> <p>2 Q. I'm sorry to interrupt. And</p> <p>3 your methodology, though, as it relates to</p> <p>4 Bradford Hill, employs a methodology that has</p> <p>5 less reliance on dose response, right?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. Not less reliance on dose</p> <p>9 response, just that in this particular case,</p> <p>10 determining what the dosage is makes it hard</p> <p>11 to determine the dose response.</p> <p>12 BY MS. BROWN:</p> <p>13 Q. And you say in your report that</p> <p>14 you consider that a less important factor,</p> <p>15 right?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 BY MS. BROWN:</p> <p>19 Q. And so that's your report on</p> <p>20 page 15, I think we talked about this</p> <p>21 earlier, "Given the limitations of the data,</p> <p>22 I consider this to be a less important factor</p> <p>23 compared to strength of association,</p> <p>24 consistency and biologic mechanism"?</p>	<p>1 A. 1.3 and 1.4 is not 10, but 1.2</p> <p>2 was the risk of hormone -- postmenopausal</p> <p>3 hormone replacement therapy, and I believe</p> <p>4 that's a real risk also.</p> <p>5 BY MS. BROWN:</p> <p>6 Q. Have you considered in your</p> <p>7 review of the epi, the FDA's concern that the</p> <p>8 studies that have found small positive</p> <p>9 associations have lower confidence limits</p> <p>10 that are pretty close to 1? Have you looked</p> <p>11 into that?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. So when the odds ratio's 1.3,</p> <p>15 your confident intervals might be close to 1</p> <p>16 sometimes. However, if it doesn't cross 1,</p> <p>17 it's statistically significant.</p> <p>18 BY MS. BROWN:</p> <p>19 Q. And one of the reasons -- do</p> <p>20 you understand why the FDA is concerned if</p> <p>21 the confidence interval is getting close to</p> <p>22 1?</p> <p>23 A. That it might be by random</p> <p>24 chance, yes.</p>

Page 370	Page 372
<p>1 Q. And do you share that concern</p> <p>2 as you evaluate the confidence intervals</p> <p>3 here?</p> <p>4 A. If I didn't see such a</p> <p>5 consistent average of 1.3 to 1.4, I would be</p> <p>6 more concerned about it. As a whole, I'm not</p> <p>7 concerned about it when I look at all of the</p> <p>8 evidence.</p> <p>9 Q. And when you say "consistent,"</p> <p>10 you're referring within the population</p> <p>11 case-control studies, right?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. Yes.</p> <p>15 BY MS. BROWN:</p> <p>16 Q. Because if you look at the</p> <p>17 prospective cohorts, there's not consistency</p> <p>18 in the case controls, right?</p> <p>19 A. When you look at the</p> <p>20 meta-analyses, everything as a whole, yes,</p> <p>21 1.3 to 1.4.</p> <p>22 Q. Okay. If you bear with me for</p> <p>23 just one minute, Dr. Wolf, I want to just</p> <p>24 make sure I'm not forgetting anything and</p>	<p>1 for me everything, other than talc, that you</p> <p>2 believe is in Johnson &amp; Johnson baby powder</p> <p>3 and causes ovarian cancer.</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 A. What I believe is in talcum</p> <p>7 powder product and that can be -- cause</p> <p>8 inflammation and/or be carcinogenic is platy</p> <p>9 talc, fibrous talc, asbestos, heavy metals,</p> <p>10 including nickel, chromium and cobalt, and</p> <p>11 fragrance products that can be irritating and</p> <p>12 inflammatory.</p> <p>13 BY MS. BROWN:</p> <p>14 Q. And you have not formed an</p> <p>15 opinion in connection with your analysis, as</p> <p>16 to how much each of the items that you just</p> <p>17 listed make up baby powder, right?</p> <p>18 MS. O'DELL: Of a particular</p> <p>19 bottle, over time or --</p> <p>20 MS. BROWN: Any --</p> <p>21 MS. O'DELL: -- what's the</p> <p>22 context of the question?</p> <p>23 MS. BROWN: At all.</p> <p>24</p>
Page 371	Page 373
<p>1 then I'm going to turn the questioning over</p> <p>2 to some of my colleagues.</p> <p>3 When you say on page 8, "The</p> <p>4 risk elevation is 20-60 percent," do you</p> <p>5 think it's more like 30 to 40?</p> <p>6 A. I think if you look at all the</p> <p>7 papers, some of them are 20 and some of them</p> <p>8 are as high as 60.</p> <p>9 Q. And, of course, if the actual</p> <p>10 risk is as high as 60, Narod's critique is</p> <p>11 not accurate. Fair?</p> <p>12 A. That's the range of what's been</p> <p>13 reported. The average is 1.3 to 1.4, and I</p> <p>14 believe that's what he estimated the 200,000</p> <p>15 on.</p> <p>16 Q. Did you understand him to be</p> <p>17 estimating how many he needed to study if the</p> <p>18 true relative risk was 1.2?</p> <p>19 A. I don't remember if it was 1.2</p> <p>20 or 1.3.</p> <p>21 Q. Okay. Real quick, Doctor, I</p> <p>22 want to just make sure I understand your</p> <p>23 opinion as it relates to the composition of</p> <p>24 talcum powder. Do you believe that -- list</p>	<p>1 BY MS. BROWN:</p> <p>2 Q. I mean, have you attempted to</p> <p>3 quantify how much heavy metal is in baby</p> <p>4 powder?</p> <p>5 A. I haven't attempted to quantify</p> <p>6 it. The fact that there's any heavy metal in</p> <p>7 there that's carcinogenic is of concern.</p> <p>8 Q. And what are you relying on for</p> <p>9 your opinion that there's heavy metals in</p> <p>10 baby powder?</p> <p>11 A. So that I believe is in Julie</p> <p>12 Pier's -- let me find it -- deposition.</p> <p>13 Julie Pier -- Exhibit 47.</p> <p>14 Q. Other than Exhibit 47 to Julie</p> <p>15 Pier's deposition, are you relying on</p> <p>16 anything else to support your opinion that</p> <p>17 baby powder products are contaminated with</p> <p>18 heavy metals?</p> <p>19 A. And also the testing by Longo</p> <p>20 and Rigler.</p> <p>21 Q. Other than Julie Pier, Longo</p> <p>22 and Rigler, are you relying on anything else</p> <p>23 to support your opinion that heavy metals</p> <p>24 contaminate Johnson &amp; Johnson baby powder</p>



<p style="text-align: right;">Page 374</p> <p>1 products?</p> <p>2 A. No.</p> <p>3 Q. And as to asbestos, we reviewed</p> <p>4 your reliance materials before. You're</p> <p>5 relying on the articles you pointed me to,</p> <p>6 Hopkins Exhibit 28, Blount's testimony and</p> <p>7 her '91 article and Longo's reports, to</p> <p>8 support your opinion that talcum powder</p> <p>9 contains asbestos, correct?</p> <p>10 A. And also the deposition of</p> <p>11 Julie Pier.</p> <p>12 Q. And again, as it relates to</p> <p>13 asbestos, you haven't made a determination as</p> <p>14 to how much asbestos is contaminating talcum</p> <p>15 powder, right?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 A. I've made a determination that</p> <p>19 these testings show evidence of asbestos in a</p> <p>20 significant amount of talcum powder that was</p> <p>21 tested.</p> <p>22 BY MS. BROWN:</p> <p>23 Q. Okay. But in terms of how much</p> <p>24 asbestos is in an individual bottle, you</p>	<p style="text-align: right;">Page 376</p> <p>1 MS. O'DELL: Object to the</p> <p>2 form.</p> <p>3 A. I didn't say these cause</p> <p>4 ovarian cancer. I say that they're known to</p> <p>5 be carcinogenic and could be the cause of why</p> <p>6 talcum powder products causes ovarian cancer.</p> <p>7 And the other thing in there that I know can</p> <p>8 be inflammatory, from reading Dr. Crowley's</p> <p>9 report, are some of the fragrances that are</p> <p>10 used. And since inflammation is a risk</p> <p>11 factor and an initiator in -- leads -- is</p> <p>12 related to the progression of ovarian cancer,</p> <p>13 I have concerns about those.</p> <p>14 BY MS. BROWN:</p> <p>15 Q. And your opinion, then, Doctor,</p> <p>16 as I understand it, is that you're not sure</p> <p>17 which or what combination of all the items</p> <p>18 you just listed to me are working to cause</p> <p>19 cancer; is that right?</p> <p>20 MS. O'DELL: Object do the</p> <p>21 form.</p> <p>22 A. My opinion is that it's the</p> <p>23 talcum powder product as a whole that</p> <p>24 increases the risk of ovarian cancer, and</p>
<p style="text-align: right;">Page 375</p> <p>1 haven't attempted to quantify that, right?</p> <p>2 A. I haven't and it wouldn't</p> <p>3 change my opinion.</p> <p>4 Q. Okay. As it relates to fibrous</p> <p>5 talc, what are you relying on for your</p> <p>6 opinion that fibrous talc is contained in</p> <p>7 Johnson &amp; Johnson baby powder products?</p> <p>8 A. I don't have it referenced</p> <p>9 here, but my understanding is that it's hard</p> <p>10 to get pure platy talc and it's always</p> <p>11 contaminated with some fibrous talc and I</p> <p>12 can't tell you where I've seen it, but I've</p> <p>13 seen it -- reports as small as 2 percent, as</p> <p>14 high as 20 percent.</p> <p>15 Q. And sitting here today, you're</p> <p>16 not sure of the site for that 2 to 20 percent</p> <p>17 fibrous talc?</p> <p>18 A. I'm not. No.</p> <p>19 Q. Other than platy talc, 2 to 20</p> <p>20 percent fibrous talc, some amount of heavy</p> <p>21 metals and some amount of asbestos, is there</p> <p>22 anything else you believe is in Johnson &amp;</p> <p>23 Johnson baby powder products that causes</p> <p>24 ovarian cancer?</p>	<p style="text-align: right;">Page 377</p> <p>1 I've listed things that I know are in there</p> <p>2 that can be carcinogenic or inflammatory.</p> <p>3 BY MS. BROWN:</p> <p>4 Q. And to be clear, though, you</p> <p>5 don't have an opinion as to the amounts of</p> <p>6 any of the items you just listed for me as</p> <p>7 they appear in baby powder, right?</p> <p>8 MS. O'DELL: Object to the --</p> <p>9 object to the form.</p> <p>10 BY MS. BROWN:</p> <p>11 Q. That was a bad question.</p> <p>12 Here's what I want to know. I understand</p> <p>13 your opinion is based on your assumption that</p> <p>14 fragrance, platy talc, fibrous talc, heavy</p> <p>15 metals and asbestos are in Johnson &amp;</p> <p>16 Johnson's products, correct?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form.</p> <p>19 A. It's in talcum powder product.</p> <p>20 BY MS. BROWN:</p> <p>21 Q. And that would include Johnson</p> <p>22 &amp; Johnson's products, correct?</p> <p>23 A. Would include any talcum powder</p> <p>24 product.</p>



<p style="text-align: right;">Page 378</p> <p>1 Q. Are you of the opinion that --</p> <p>2 we need to change the tape. Sorry.</p> <p>3 THE VIDEOGRAPHER: Going off</p> <p>4 the record. The time is 4:40 p.m.</p> <p>5 (Recess taken from 4:40 p.m. to</p> <p>6 4:52 p.m.)</p> <p>7 THE VIDEOGRAPHER: This marks</p> <p>8 the beginning of disk 4. Back on the</p> <p>9 record. The time is 4:52 p.m.</p> <p>10 BY MS. BROWN:</p> <p>11 Q. Dr. Wolf, before we took a</p> <p>12 break, we were discussing your opinion that</p> <p>13 J&amp;J's talcum powder products contain</p> <p>14 fragrances, platy talc, fibrous talc, heavy</p> <p>15 metals and asbestos. Do you recall that?</p> <p>16 A. I do.</p> <p>17 Q. And my question for you,</p> <p>18 Doctor, is it your opinion that J&amp;J's talcum</p> <p>19 powder products contained all of those things</p> <p>20 at all periods of time?</p> <p>21 A. Well, what I know for sure and</p> <p>22 what testing that I've seen shows, that</p> <p>23 evidence of asbestos, heavy metals from the</p> <p>24 '70s through the '90s and testing looking for</p>	<p style="text-align: right;">Page 380</p> <p>1 there's evidence of asbestos at least.</p> <p>2 Q. And that's the Longo testing</p> <p>3 you referred to earlier?</p> <p>4 A. Yes.</p> <p>5 Q. Okay. Final question -- final</p> <p>6 area of questioning, Dr. Wolf, would be</p> <p>7 page 20 of your report. To be clear, you</p> <p>8 believe that the mechanism by which talcum</p> <p>9 powder causes cancer is chronic inflammation;</p> <p>10 is that right?</p> <p>11 A. This is a reference page. Are</p> <p>12 you looking at a different page?</p> <p>13 Q. Page 12 of your report?</p> <p>14 MS. O'DELL: You said 20.</p> <p>15 A. You said 20.</p> <p>16 BY MS. BROWN:</p> <p>17 Q. Sorry. Tired.</p> <p>18 A. I know. I understand. I</p> <p>19 believe it's inflammation that leads to</p> <p>20 oxidative stress that then causes DNA damage,</p> <p>21 and I believe with Saed's most recent papers,</p> <p>22 that it actually induces gene mutations that</p> <p>23 change ovarian epithelial cells and culture.</p> <p>24 Q. Do you rely on anyone else,</p>
<p style="text-align: right;">Page 379</p> <p>1 fibrous talc at that same time -- actually</p> <p>2 Longo tested for fibrous talc too and found</p> <p>3 it in 41 of 42 specimens. I don't know about</p> <p>4 the fragrance because I don't know how long</p> <p>5 this particular fragrance formulation has</p> <p>6 been used, if it's been -- how long it's been</p> <p>7 there. And platy talc and fibrous talc I</p> <p>8 would assume have always been there.</p> <p>9 Q. Have you done any investigation</p> <p>10 into the different source mines J&amp;J has used</p> <p>11 over the years for its talcum powder</p> <p>12 products?</p> <p>13 A. They have used talcum powder</p> <p>14 from Vermont, from Italy -- I think Italy</p> <p>15 first and then Vermont and then China.</p> <p>16 Q. And do you believe that the</p> <p>17 components of talcum powder have changed over</p> <p>18 time?</p> <p>19 A. I believe that there's probably</p> <p>20 slight differences coming from different</p> <p>21 areas in the world. But as far as I can</p> <p>22 tell, the testing that I have seen throughout</p> <p>23 the Italian and Vermont and into early Asian,</p> <p>24 which I assume meant China, testing, that</p>	<p style="text-align: right;">Page 381</p> <p>1 other than Dr. Saed, for your opinion that</p> <p>2 talcum powder is -- do you believe that talc</p> <p>3 is genotoxic?</p> <p>4 A. I believe that Dr. Saed's paper</p> <p>5 that he found gene -- point gene mutations</p> <p>6 after application of talc -- talcum powder.</p> <p>7 Q. Do you believe that talcum</p> <p>8 powder is genotoxic to ovarian cells?</p> <p>9 A. I believe that his paper shows</p> <p>10 that there's genetic mutations that occur</p> <p>11 with exposure to talcum powder.</p> <p>12 Q. Independent of inflammation?</p> <p>13 A. Independent of inflammation.</p> <p>14 Q. So in fact, you think there are</p> <p>15 two ways by which talcum powder can cause</p> <p>16 ovarian cancer: Chronic inflammation and</p> <p>17 genetic mutations, correct?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 A. So chronic inflammation that</p> <p>21 leads to changes within the cell and changes</p> <p>22 the oxidative state that then causes,</p> <p>23 secondarily, cytokine stimulation and changes</p> <p>24 in the cell, and then Saed's paper also shows</p>

Judith K. Wolf, M.D.

Page 382	Page 384
<p>1 evidence of gene -- point gene mutations that 2 change the oxidative state of the cell to a 3 prone inflammatory state. 4 BY MS. BROWN: 5 Q. And other than Dr. Saed's work, 6 are you relying on any other published 7 literature to support your belief that talc 8 is genotoxic? 9 MS. O'DELL: Object to the 10 form. 11 A. Dr. Saed's work, as per my 12 review, is the most convincing data that I've 13 seen of genetic changes, separate from 14 inflammatory changes, when talc was exposed 15 to both ovarian epithelial cells, ovarian 16 cancer cell lines and fallopian tube 17 epithelial cell lines. 18 BY MS. BROWN: 19 Q. And one of the papers you cited 20 for us in your early footnotes, lists sort of 21 a weight of the hierarchy of evidence. Do 22 you recall that paper? 23 MS. O'DELL: Object to the 24 form.</p>	<p>1 BY MS. BROWN: 2 Q. And finally, Doctor, you 3 reference on page 12, in support of your 4 opinion -- page 12 of your report in support 5 of your opinion, that talcum powder causes 6 inflammation and oxidative stress in vitro 7 and in vivo. You reference the NTP study; is 8 that right? 9 A. Yes. 10 Q. Have you reviewed the FDA's 11 analysis of that NTP study? 12 A. I'm aware that they had some 13 concerns about the analysis. 14 Q. Do you share the concerns and 15 the -- first of all, you understand the FDA 16 concluded that the paper had serious flaws, 17 right? 18 MS. O'DELL: Object to the 19 form. 20 A. I understand that the FDA had 21 concerns about the paper. 22 BY MS. BROWN: 23 Q. Do you share those concerns? 24 A. I think that the NTP toxicology</p>
Page 383	Page 385
<p>1 BY MS. BROWN: 2 Q. You had a footnote 4 and 5, 3 some cites that dealt with sort of he weight 4 of the evidence, generally. Do you remember 5 those? 6 A. I just want to see what they 7 are, 4 and 5. 8 Q. Footnote 4 and 5. 9 A. These are talking about the 10 difference between cohort studies and 11 meta-analysis? 12 Q. Right. And they contained a 13 chart with a hierarchy of evidence. Do you 14 recall reviewing that? 15 A. Yes. 16 Q. And you would agree that expert 17 witness opinions are the very lowest rung of 18 that chart? 19 MS. O'DELL: Object to the 20 form. 21 A. I've referenced those charts in 22 relationship to evaluating cohort studies and 23 meta-analysis studies. 24</p>	<p>1 studies of talc is one of the pieces of 2 evidence that I believe supports that 3 inflammation occurs after talcum powder 4 application and can cause -- be a 5 carcinogenic -- mechanism of carcinogenesis. 6 Q. Do you agree with the 7 conclusion of the 1994 FDA workshop, that the 8 NTP study has no relevance to human risk? 9 MS. O'DELL: Object to the 10 form. 11 A. I believe that the NTP study 12 helps as an informative, along with all of 13 the other studies listed there, that talcum 14 powder causes inflammation and oxidative 15 stress in ovarian cells and in cells in 16 general and that this can be carcinogenic. 17 It's a piece of the evidence, not the whole 18 evidence. 19 BY MS. BROWN: 20 Q. Finally, Doctor, before I turn 21 the questioning over to my colleague, you 22 testified a little earlier that you plan to 23 write a review article based on the 24 information contained in your report?</p>

97 (Pages 382 to 385)

<p style="text-align: right;">Page 386</p> <p>1 A. Yes.</p> <p>2 Q. Do you have plans to disclose</p> <p>3 your work as an expert witness when you</p> <p>4 author that publication?</p> <p>5 A. Of course I would.</p> <p>6 Q. Would you plan to disclose the</p> <p>7 amount of money that you've made working for</p> <p>8 plaintiffs' lawyers in connection with that</p> <p>9 litigation -- paper?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. As I've never written a</p> <p>13 paper -- as I've never been an expert witness</p> <p>14 before, I don't know what you need to</p> <p>15 disclose as far as that. I know that if you</p> <p>16 have grant or funding for anything, you</p> <p>17 disclose the amount and who it's from. I'm</p> <p>18 assuming it would be the same for this, but I</p> <p>19 don't know. I would check with the journal</p> <p>20 and see what was required and do whatever was</p> <p>21 appropriate.</p> <p>22 BY MS. BROWN:</p> <p>23 Q. And finally, Doctor, do you</p> <p>24 know of any scientific support for the</p>	<p style="text-align: right;">Page 388</p> <p>1 think you can make the step to say that it's</p> <p>2 because their vagina was stretched out more.</p> <p>3 MS. BROWN: Thanks for your</p> <p>4 time today, Dr. Wolf. I'm going to</p> <p>5 hand it over to my colleague.</p> <p>6 Can we go off for a second?</p> <p>7 MR. KLATT: Yeah, let's do</p> <p>8 that.</p> <p>9 THE VIDEOGRAPHER: Going off</p> <p>10 the record. The time is 5:02 p.m.</p> <p>11 (Recess taken from 5:02 p.m. to</p> <p>12 5:06 p.m.)</p> <p>13 THE VIDEOGRAPHER: Back on the</p> <p>14 record. The time is 5:06 p.m.</p> <p>15 EXAMINATION</p> <p>16 BY MR. KLATT:</p> <p>17 Q. Good afternoon, Dr. Wolf.</p> <p>18 A. Good afternoon.</p> <p>19 Q. My name is Mike Klatt and I</p> <p>20 represent Imerys Talc America in this case.</p> <p>21 You said earlier that you were aware that</p> <p>22 Imerys is a mining company, correct?</p> <p>23 A. That's correct.</p> <p>24 Q. I'm going to skip around,</p>
<p style="text-align: right;">Page 387</p> <p>1 opinions that women who have had children</p> <p>2 have a stretched-out vaginal tract such that</p> <p>3 migration is more likely?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 A. I wouldn't put -- I would never</p> <p>7 say that women who have had children have a</p> <p>8 stretched-out vaginal tract. All women have</p> <p>9 an open vaginal tract. Women who have had</p> <p>10 multiple vaginal deliveries may or may not</p> <p>11 have a larger opening to their vagina than</p> <p>12 women who do not.</p> <p>13 BY MS. BROWN:</p> <p>14 Q. You haven't seen any data to</p> <p>15 suggest that having more kids increases your</p> <p>16 risk of ovarian cancer because more</p> <p>17 carcinogens can migrate to your ovaries,</p> <p>18 right?</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 A. So that seems like a multistep</p> <p>22 question. I do believe that at least one of</p> <p>23 the case-control studies looked at parity as</p> <p>24 a possible risk factor. Personally, I don't</p>	<p style="text-align: right;">Page 389</p> <p>1 because I've just been following what's been</p> <p>2 going on today and I just have a lot of</p> <p>3 questions in different areas. So there's</p> <p>4 probably not going to be necessarily a</p> <p>5 logical progression. So if you'll just bear</p> <p>6 with me, I'd appreciate it.</p> <p>7 A. Okay.</p> <p>8 Q. A minute ago, I believe that</p> <p>9 Ms. Brown asked you, that if you end up</p> <p>10 writing a letter or a review article to any</p> <p>11 organization about talc and ovarian cancer,</p> <p>12 you think it's important to disclose that</p> <p>13 you've been an expert in litigation regarding</p> <p>14 talc and ovarian cancer, correct?</p> <p>15 A. Yes.</p> <p>16 Q. Do you think it's important</p> <p>17 that you specifically disclose that you've</p> <p>18 been a retained, paid witness for plaintiffs</p> <p>19 in talc ovarian cancer in making that</p> <p>20 disclosure?</p> <p>21 A. Again, I've never been an</p> <p>22 expert witness before. I don't know what the</p> <p>23 rules of what I have to disclose, so that</p> <p>24 anyone who reads my article can read it with</p>

<p style="text-align: right;">Page 390</p> <p>1 all of the information. Whatever the journal</p> <p>2 said I needed to disclose, I would disclose.</p> <p>3 Q. But don't you think it's</p> <p>4 important for your readers to know which side</p> <p>5 you're involved in in this litigation?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. I don't know if that's</p> <p>9 something that is routinely done. If it is,</p> <p>10 I definitely would do that.</p> <p>11 BY MR. KLATT:</p> <p>12 Q. But I'm asking if you,</p> <p>13 personally, think that's an important fact to</p> <p>14 disclose. Wouldn't you want to know that if</p> <p>15 you were a doctor not involved in this in</p> <p>16 reading an article, which side the person who</p> <p>17 authored the article was testifying for?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 BY MR. KLATT:</p> <p>21 Q. Would that be important to you</p> <p>22 to know?</p> <p>23 A. I would want to know all the</p> <p>24 information that I could know. I'm assuming</p>	<p style="text-align: right;">Page 392</p> <p>1 letter somewhere?</p> <p>2 MS. O'DELL: Uh-huh.</p> <p>3 A. And it has been accepted with</p> <p>4 some reviewer comments, which Dr. Saed</p> <p>5 addressed. I gave counsel one that was not</p> <p>6 marked.</p> <p>7 THE WITNESS: Is it on the</p> <p>8 back?</p> <p>9 A. Oh, yes, here.</p> <p>10 BY MR. KLATT:</p> <p>11 Q. And are there any peer review</p> <p>12 or comments compared -- put forth in what</p> <p>13 you're looking at?</p> <p>14 A. The reviewer's -- yeah. Say</p> <p>15 that question again.</p> <p>16 Q. When people peer review an</p> <p>17 article --</p> <p>18 A. Yes.</p> <p>19 Q. -- they submit comments,</p> <p>20 correct?</p> <p>21 A. Yes.</p> <p>22 Q. Suggestions for revising the</p> <p>23 article or adding data or adding explanation</p> <p>24 or whatever, correct?</p>
<p style="text-align: right;">Page 391</p> <p>1 that that's information that would be</p> <p>2 required to be disclosed and I would disclose</p> <p>3 it.</p> <p>4 Q. Okay. Can you look at Exhibit</p> <p>5 No. 4, which is Dr. Saed's manuscript.</p> <p>6 A. Yes.</p> <p>7 Q. That's not a published article,</p> <p>8 correct?</p> <p>9 A. It's an accepted article.</p> <p>10 Q. Well, it hasn't even been peer</p> <p>11 reviewed yet, correct?</p> <p>12 A. No, it has been peer reviewed.</p> <p>13 Q. Can you hand me the article?</p> <p>14 Do you see how on multiple pages, virtually</p> <p>15 every page in blueprint, it says "for peer</p> <p>16 review"?</p> <p>17 A. Yes.</p> <p>18 Q. So that's being submitted for</p> <p>19 peer review, correct?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 A. It has been submitted. It has</p> <p>23 been reviewed.</p> <p>24 THE WITNESS: Do we have the</p>	<p style="text-align: right;">Page 393</p> <p>1 A. Yes.</p> <p>2 Q. Where are those comments</p> <p>3 regarding Saed's article in what you're</p> <p>4 looking at?</p> <p>5 A. There's nothing here. There's</p> <p>6 also a letter from Dr. Saed when he sent the</p> <p>7 paper back in with the comments from the</p> <p>8 reviewers and his addressing of those</p> <p>9 comments. This article has the changes that</p> <p>10 the reviewer has recommended.</p> <p>11 Q. Have you seen this other</p> <p>12 document that has the peer reviewer comments?</p> <p>13 A. I have.</p> <p>14 Q. I'm sorry?</p> <p>15 A. I have seen his letter. I</p> <p>16 don't recall that it has all the specific</p> <p>17 comments. It has what he's viewing as him</p> <p>18 addressing the comments, but I don't know if</p> <p>19 there are comments or --</p> <p>20 Q. Do you have that letter with</p> <p>21 you?</p> <p>22 A. I thought I had it.</p> <p>23 MS. O'DELL: No. I mean, I</p> <p>24 think there may be some confusion on</p>

Page 394	Page 396
<p>1 that point.</p> <p>2 BY MR. KLATT:</p> <p>3 Q. Well, if there's anything else</p> <p>4 regarding Dr. Saed that you've reviewed that</p> <p>5 you haven't brought here and marked as an</p> <p>6 exhibit, we'd request that, please.</p> <p>7 A. Okay.</p> <p>8 Q. Is that fine with you?</p> <p>9 A. Yes.</p> <p>10 Q. Now, looking at Dr. Saed's</p> <p>11 manuscript that's been marked as Exhibit 4,</p> <p>12 I'm going to turn you to --</p> <p>13 THE WITNESS: Do I have my own</p> <p>14 copy of that? Yes, here it is.</p> <p>15 BY MR. KLATT:</p> <p>16 Q. I'm going to turn you to</p> <p>17 page 12 of Exhibit 4.</p> <p>18 A. Yeah.</p> <p>19 Q. And do you see down at the</p> <p>20 bottom of the page, it says "Conflict of</p> <p>21 Interest"?</p> <p>22 A. Yes.</p> <p>23 Q. It says, "The corresponding</p> <p>24 author, Dr. Ghassam Saed, acted as a</p>	<p>1 listed here?</p> <p>2 A. Beasley Allen isn't listed here</p> <p>3 either.</p> <p>4 MS. O'DELL: Object to form.</p> <p>5 A. It just says he received a</p> <p>6 consulting fee. So I don't know where else</p> <p>7 the money -- what other money he used.</p> <p>8 BY MR. KLATT:</p> <p>9 Q. But Beasley Allen isn't even</p> <p>10 listed here, as you said, as a source of the</p> <p>11 money for his work, correct?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. That's correct.</p> <p>15 BY MR. KLATT:</p> <p>16 Q. Okay. This isn't an adequate</p> <p>17 conflict of interest disclosure, is it?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form. If you know. Don't guess.</p> <p>20 A. I'm assuming that this is the</p> <p>21 conflict of interest that they requested from</p> <p>22 Reproductive Scientists [sic], and if they</p> <p>23 accept it, then I consider it adequate.</p> <p>24</p>
Page 395	Page 397
<p>1 consultant regarding this topic for a fee,</p> <p>2 otherwise, the authors declared that there</p> <p>3 are no conflicts of interest."</p> <p>4 There's no disclosure there</p> <p>5 that Dr. Saed's involved in litigation on</p> <p>6 behalf of plaintiffs in talc ovarian cancer</p> <p>7 cases, is there?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. My assumption is that what</p> <p>11 Reproductive Scientists [sic] requested be</p> <p>12 disclosed is what is stated here. And so</p> <p>13 this is what it says.</p> <p>14 BY MR. KLATT:</p> <p>15 Q. Who paid the fee to Dr. Saed</p> <p>16 for doing this work?</p> <p>17 A. This particularly doesn't say.</p> <p>18 I'm assuming that attorneys paid the fee.</p> <p>19 Q. Do you know who paid?</p> <p>20 A. I believe that in support of</p> <p>21 some of this data -- of this research that he</p> <p>22 received money from Beasley Allen.</p> <p>23 Q. Okay. Other than Beasley</p> <p>24 Allen, what contributors to this work are</p>	<p>1 BY MR. KLATT:</p> <p>2 Q. So whatever the journal says is</p> <p>3 adequate is adequate in your mind?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 BY MR. KLATT:</p> <p>7 Q. Is that what you're saying?</p> <p>8 A. I'm saying that as far as --</p> <p>9 this is what's disclosed. The journal</p> <p>10 accepted the article. I'm assuming they</p> <p>11 considered it was adequate disclosure.</p> <p>12 Q. But if you're a physician, a</p> <p>13 gynecologic oncologist out there in the</p> <p>14 field, not involved in the talc ovarian</p> <p>15 cancer litigation and you ultimately read</p> <p>16 Dr. Saed's paper in Reproductive Scientists</p> <p>17 [sic], aren't you going to want to know that</p> <p>18 he was a paid witness for the plaintiffs in</p> <p>19 that litigation?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 BY MR. KLATT:</p> <p>23 Q. That's something you'd want to</p> <p>24 know, isn't it?</p>



Page 398	Page 400
<p>1 MS. O'DELL: Object to the</p> <p>2 form.</p> <p>3 A. If I had questions about</p> <p>4 exactly where the money came from, I would</p> <p>5 call Dr. Saed and ask him.</p> <p>6 BY MR. KLATT:</p> <p>7 Q. Have you ever done that for any</p> <p>8 article you've read in a journal?</p> <p>9 A. I haven't.</p> <p>10 Q. What do you know about the</p> <p>11 Journal of Reproductive Sciences?</p> <p>12 A. I don't know that much about</p> <p>13 it. It's not a journal that I routinely</p> <p>14 read.</p> <p>15 Q. And as a gynecologic</p> <p>16 oncologist, there's a certain set of journals</p> <p>17 that you routinely review, correct?</p> <p>18 A. Yes.</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 BY MR. KLATT:</p> <p>22 Q. And Reproductive Sciences is</p> <p>23 not one of those, right?</p> <p>24 A. It is not one of those.</p>	<p>1 A. In talcum-based body products,</p> <p>2 my concerns for carcinogenesis are platy</p> <p>3 talc, fibrous talc, asbestos, heavy metal,</p> <p>4 specifically the ones that have been found,</p> <p>5 nickel, chromium and cobalt and inflammation</p> <p>6 from the fragrances, which I know that</p> <p>7 inflammation is associated with ovarian</p> <p>8 cancer and so I have concerns about all of</p> <p>9 those.</p> <p>10 Q. Well, having concerns is one</p> <p>11 thing, but testifying based on a reasonable</p> <p>12 degree of medical certainty that these things</p> <p>13 are, in fact, a cause of ovarian cancer is a</p> <p>14 different thing. So is it your opinion that</p> <p>15 all of these items, platy talc, fibrous talc,</p> <p>16 asbestos, nickel, chromium, cobalt and</p> <p>17 fragrance are contributing causes of ovarian</p> <p>18 cancer in women who use talc-based body</p> <p>19 powder products?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 A. It's my opinion that</p> <p>23 talcum-based -- perineum use of talcum-based</p> <p>24 body products causes ovarian cancer in some</p>
Page 399	Page 401
<p>1 Q. Had you ever heard of it</p> <p>2 before?</p> <p>3 A. I can't tell you if I've ever</p> <p>4 heard of it. I've heard of lots of journals</p> <p>5 over the years and I don't remember all of</p> <p>6 them.</p> <p>7 Q. You don't remember of ever</p> <p>8 hearing of Reproductive Sciences before you</p> <p>9 saw Exhibit 4, correct?</p> <p>10 A. I can't recall.</p> <p>11 Q. Now, earlier, you said in</p> <p>12 response to Ms. Brown's questions, that</p> <p>13 things that you feel like may be playing a</p> <p>14 role in talc-based body powder products and</p> <p>15 ovarian cancer, if I got it right, were platy</p> <p>16 talc; is that right?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form. If you're going to go -- I'll</p> <p>19 object each time, but I object to the</p> <p>20 preparatory language.</p> <p>21 BY MR. KLATT:</p> <p>22 Q. What things in talc-based body</p> <p>23 powder products do you think cause ovarian</p> <p>24 cancer?</p>	<p>1 women and increases the risk in all. When I</p> <p>2 look to see what is in it that could be</p> <p>3 dangerous, potentially dangerous to women, I</p> <p>4 see some things that are known to be</p> <p>5 carcinogenic, such as fibrous talc and</p> <p>6 asbestos and heavy metals. I see some things</p> <p>7 that are possibly carcinogenic, such as platy</p> <p>8 talc, and I see fragrances that are known to</p> <p>9 be irritating and causing inflammation.</p> <p>10 BY MR. KLATT:</p> <p>11 Q. Do you think any one of those</p> <p>12 things by itself is capable of causing</p> <p>13 ovarian cancer in women who use talc-based</p> <p>14 body powder products?</p> <p>15 A. I didn't evaluate the data that</p> <p>16 way and I don't look at the product that way.</p> <p>17 I'm looking at it as a whole.</p> <p>18 Q. So if you testify in the</p> <p>19 hearing of Judge Wolfson this year and she</p> <p>20 asks you, because judges can ask witnesses</p> <p>21 questions, which one of these items that</p> <p>22 you've mentioned are capable by themselves of</p> <p>23 causing ovarian cancer in women using</p> <p>24 talc-based body powder products, you're going</p>



Page 402	Page 404
<p>1 to tell her you can't tell her which one of</p> <p>2 these is capable by itself?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form, misstates her testimony.</p> <p>5 A. I'm going to tell her just what</p> <p>6 I said, that I evaluated the product as a</p> <p>7 whole and I found evidence of multiple</p> <p>8 carcinogenic, possibly carcinogenic and</p> <p>9 inflammatory substances that could account</p> <p>10 for that. Because they're all in the</p> <p>11 product, I can't separate them out and say</p> <p>12 which one is causing it.</p> <p>13 BY MR. KLATT:</p> <p>14 Q. And you can just say that they</p> <p>15 possibly cause it, correct, not that they</p> <p>16 probably cause it?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form, misstates her testimony.</p> <p>19 BY MR. KLATT:</p> <p>20 Q. You just said "possibly."</p> <p>21 Didn't I understand that?</p> <p>22 MS. O'DELL: Object to the</p> <p>23 form. That's not what she said.</p> <p>24</p>	<p>1 understand.</p> <p>2 A. So let me list them again.</p> <p>3 Platy talc has been determined to be possibly</p> <p>4 carcinogenic, asbestos has been determined to</p> <p>5 be carcinogenic, fibrous talc has been</p> <p>6 determined to be carcinogenic, nickel and</p> <p>7 chromium are -- have been determined to be</p> <p>8 carcinogenic, cobalt has been determined to</p> <p>9 be possibly carcinogenic, and the</p> <p>10 fragrances -- some of the substances in the</p> <p>11 fragrance are known to be inflammatory or</p> <p>12 cause -- inflammatory or irritating.</p> <p>13 And therefore, when I look at</p> <p>14 the product of the whole, with all of that</p> <p>15 spectrum of stuff in it, things in it, that</p> <p>16 at the very least some are, the fragrances</p> <p>17 are inflammatory and/or irritating and at the</p> <p>18 very most, several are known to be</p> <p>19 carcinogenic, that it's the combination of</p> <p>20 that that increases the risk of ovarian</p> <p>21 cancer in women who use perineal talcum</p> <p>22 powder product.</p> <p>23 BY MR. KLATT:</p> <p>24 Q. Are any of these things that</p>
Page 403	Page 405
<p>1 BY MR. KLATT:</p> <p>2 Q. Let's read it back. I think</p> <p>3 you just said "possibly cause," correct?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 A. No, that's not what I said. I</p> <p>7 said there are multiple that are</p> <p>8 carcinogenic, possibly carcinogenic and</p> <p>9 inflammatory.</p> <p>10 BY MR. KLATT:</p> <p>11 Q. So you're saying they're</p> <p>12 possibly carcinogenic --</p> <p>13 A. No, I'm saying some of the</p> <p>14 agents --</p> <p>15 Q. Let me finish -- not probably</p> <p>16 carcinogenic, correct?</p> <p>17 MS. O'DELL: Excuse me.</p> <p>18 A. No.</p> <p>19 MS. O'DELL: Excuse me, let me</p> <p>20 object. Object to the testimony --</p> <p>21 excuse me, object to the question</p> <p>22 because it misrepresents her</p> <p>23 testimony.</p> <p>24 You may answer if you</p>	<p>1 you've listed by themselves capable of</p> <p>2 causing ovarian cancer in women who use</p> <p>3 talc-based body powder products?</p> <p>4 A. I'm not aware that anybody has</p> <p>5 looked at using any of those things by</p> <p>6 themselves to cause -- to assess the risk of</p> <p>7 ovarian cancer. And since the product</p> <p>8 contains all of them, I don't know how that</p> <p>9 can be evaluated.</p> <p>10 Q. So if you evaluated the</p> <p>11 talc-based body powder product as a whole</p> <p>12 with all these things in them, you weren't</p> <p>13 just evaluating Imerys raw talc by itself,</p> <p>14 correct?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. I was evaluating the product.</p> <p>18 BY MR. KLATT:</p> <p>19 Q. The product as used by women?</p> <p>20 A. The product as used by women --</p> <p>21 the product as used by women.</p> <p>22 Q. Which is the product that sold</p> <p>23 off the shelf, correct?</p> <p>24 MS. O'DELL: Object to the</p>

Page 406	Page 408
<p>1 form.</p> <p>2 A. The product that women could</p> <p>3 obtain to use on their perineum.</p> <p>4 BY MR. KLATT:</p> <p>5 Q. From retail stores, correct?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. From wherever they get it.</p> <p>9 BY MR. KLATT:</p> <p>10 Q. And you understand Imerys</p> <p>11 doesn't sell any talc directly to women?</p> <p>12 A. I understand that.</p> <p>13 Q. And you understand fragrance is</p> <p>14 added after the talc leaves Imerys'</p> <p>15 possession?</p> <p>16 A. I understand that.</p> <p>17 Q. Do any and all forms of</p> <p>18 inflammation cause or contribute to ovarian</p> <p>19 cancer?</p> <p>20 A. In the studies on inflammation</p> <p>21 in ovarian cancer, it's -- and most cancers</p> <p>22 and inflammation, it's the concern of chronic</p> <p>23 inflammation. T cells, lymphocytes, macro</p> <p>24 fascias causing changes in the oxidation</p>	<p>1 A. There's never been any evidence</p> <p>2 of that, that I'm aware of.</p> <p>3 Q. When you -- you've done</p> <p>4 abdominal surgeries on hundreds, if not maybe</p> <p>5 even thousands of women in your career,</p> <p>6 correct?</p> <p>7 A. Yes.</p> <p>8 Q. Now, that surgery itself can</p> <p>9 cause fibrosis, inflammation and adhesions,</p> <p>10 correct?</p> <p>11 A. That's correct.</p> <p>12 Q. And those adhesions can be</p> <p>13 long-term complications for women, correct?</p> <p>14 A. Yes.</p> <p>15 Q. And that's a form of</p> <p>16 inflammation, correct?</p> <p>17 A. It's a form of acute</p> <p>18 inflammation that leads to a scar or</p> <p>19 fibrosis.</p> <p>20 Q. And that's exactly what talc</p> <p>21 leads to, correct?</p> <p>22 MS. O'DELL: Object to the</p> <p>23 form.</p> <p>24 A. There's not evidence of chronic</p>
Page 407	Page 409
<p>1 making free -- oxygen free radicals that can</p> <p>2 cause changes in the DNA. Not so much</p> <p>3 concerned about acute inflammation, but</p> <p>4 chronic inflammation.</p> <p>5 Q. Do all forms of chronic</p> <p>6 inflammation cause ovarian cancer?</p> <p>7 A. I'm not sure what forms of</p> <p>8 chronic inflammation you're asking about.</p> <p>9 Q. Well, are you saying that</p> <p>10 chronic inflammation inevitably can cause</p> <p>11 ovarian cancer?</p> <p>12 A. Chronic inflammation is a cause</p> <p>13 of ovarian cancer. You could have chronic</p> <p>14 inflammation and not get ovarian cancer.</p> <p>15 Q. Are you aware that corn</p> <p>16 starch-based body powder can cause</p> <p>17 granulomas, adhesions, fibrous tissue</p> <p>18 reactions and it's been banned by the FDA</p> <p>19 from surgical gloves and from patient</p> <p>20 examination gloves?</p> <p>21 A. I am aware of that.</p> <p>22 Q. Does the granulomas and</p> <p>23 adhesions and fibrosus that corn starch</p> <p>24 causes in patients cause ovarian cancer?</p>	<p>1 inflammation in adhesions secondary to</p> <p>2 surgery. There's an acute reaction and</p> <p>3 change and then fibrosis can occur, and</p> <p>4 that's what adhesions are, are fibrosis.</p> <p>5 BY MR. KLATT:</p> <p>6 Q. And that's what happens when</p> <p>7 talc in sufficient amounts is placed inside</p> <p>8 the body, the exact same thing, correct,</p> <p>9 Dr. Wolf?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. It's one of the things that can</p> <p>13 happen when talc is placed inside the body.</p> <p>14 BY MR. KLATT:</p> <p>15 Q. Well, is there anything else</p> <p>16 other than that type of tissue reaction that</p> <p>17 talc can cause?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 A. Yes. When talcum powder --</p> <p>21 when talc was placed, in an animal study, in</p> <p>22 the bursa of rat's ovaries, there was</p> <p>23 proliferation and precancerous changes in the</p> <p>24 ovaries.</p>

Page 410	Page 412
<p>1 BY MR. KLATT:</p> <p>2 Q. Did those animals develop</p> <p>3 ovarian cancer?</p> <p>4 A. They did not. But they were</p> <p>5 sacrificed in a short period of time.</p> <p>6 Q. Can you name for me a single</p> <p>7 animal study that you've ever seen, where</p> <p>8 talc caused ovarian cancer in the animals?</p> <p>9 A. I cannot.</p> <p>10 Q. Can you name -- in fact, can</p> <p>11 you name for me any animal study you've ever</p> <p>12 seen, where asbestos put in animals caused</p> <p>13 ovarian cancer?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. So ovarian cancer is quite rare</p> <p>17 in most animals and so it's very difficult to</p> <p>18 have an animal model of something that causes</p> <p>19 ovarian cancer.</p> <p>20 BY MR. KLATT:</p> <p>21 Q. You know there's animal models</p> <p>22 of peritoneal mesothelioma due to asbestos,</p> <p>23 correct?</p> <p>24 A. I do.</p>	<p>1 ovarian cancer?</p> <p>2 MS. O'DELL: Object to the</p> <p>3 form.</p> <p>4 A. Are you asking about my</p> <p>5 anecdotal experience?</p> <p>6 BY MR. KLATT:</p> <p>7 Q. No, I'm asking you for the</p> <p>8 medical evidence that you know, that these</p> <p>9 types of long-term adhesions resulting from</p> <p>10 surgery itself don't cause ovarian cancer in</p> <p>11 your patients?</p> <p>12 A. I'm not aware of any literature</p> <p>13 that suggests or supports that.</p> <p>14 Q. Has it ever been studied?</p> <p>15 A. I'm not aware of any studies</p> <p>16 that have been published about that.</p> <p>17 Q. Well, if it hasn't been</p> <p>18 studied, you can't say it doesn't cause</p> <p>19 ovarian cancer, can you?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 BY MR. KLATT:</p> <p>23 Q. You just don't know?</p> <p>24 MS. O'DELL: Object to the</p>
Page 411	Page 413
<p>1 Q. Are there animal models that</p> <p>2 show that asbestos instilled in animals'</p> <p>3 abdominal cavities can cause ovarian cancer?</p> <p>4 A. Not that I'm aware of.</p> <p>5 Q. Do you warn women before you do</p> <p>6 surgery on them, that your surgery can cause</p> <p>7 inflammation and adhesion -- long-term</p> <p>8 adhesion formation that could cause ovarian</p> <p>9 cancer?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. I inform my patients that</p> <p>13 surgery can cause inflammation and adhesions.</p> <p>14 BY MR. KLATT:</p> <p>15 Q. Can that cause ovarian cancer?</p> <p>16 A. Not the adhesions that are</p> <p>17 formed from the acute inflammation from</p> <p>18 surgery. I would also say that 90-plus</p> <p>19 percent of my patients, their ovaries come</p> <p>20 out when I operate on them.</p> <p>21 Q. How do you know that these</p> <p>22 long-term adhesions that result from</p> <p>23 abdominal surgery that you've done on</p> <p>24 hundreds of patients doesn't result in</p>	<p>1 form.</p> <p>2 A. I haven't seen any studies</p> <p>3 about it.</p> <p>4 BY MR. KLATT:</p> <p>5 Q. So if something is not studied,</p> <p>6 that means it doesn't occur?</p> <p>7 MS. O'DELL: Object to the</p> <p>8 form.</p> <p>9 A. That's not what I said.</p> <p>10 BY MR. KLATT:</p> <p>11 Q. Right. Simply because there's</p> <p>12 no studies doesn't prove that adhesions after</p> <p>13 surgery don't cause ovarian cancer, correct?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 BY MR. KLATT:</p> <p>17 Q. You'd have to do studies to</p> <p>18 know that.</p> <p>19 MS. O'DELL: Excuse me. Object</p> <p>20 to the form.</p> <p>21 A. I don't believe those are</p> <p>22 studies that could be done.</p> <p>23 BY MR. KLATT:</p> <p>24 Q. So there are no such studies</p>

Page 414	Page 416
<p>1 that you're aware of, correct?</p> <p>2 A. Not that I'm aware of.</p> <p>3 Q. You cited about 20 Imerys</p> <p>4 documents in -- as something that were</p> <p>5 materials that you considered.</p> <p>6 A. Yes.</p> <p>7 Q. Is that correct?</p> <p>8 A. Uh-huh.</p> <p>9 Q. Were you give a much larger set</p> <p>10 of Imerys documents and you picked those 20</p> <p>11 or were those 20 handpicked for you by the</p> <p>12 lawyers?</p> <p>13 MS. O'DELL: Object to the</p> <p>14 form.</p> <p>15 A. Those documents were provided</p> <p>16 to me by the lawyers.</p> <p>17 BY MR. KLATT:</p> <p>18 Q. So you didn't look at a much</p> <p>19 larger set of Imerys documents yourself and</p> <p>20 select those 20 yourself, correct?</p> <p>21 A. The one that -- ones that are</p> <p>22 listed on my contributing data list are the</p> <p>23 ones that I saw.</p> <p>24 Q. The only ones you saw, correct?</p>	<p>1 who the company -- what the company it came</p> <p>2 from, and the mine, if it's -- if it's noted,</p> <p>3 and any comments.</p> <p>4 Q. But my point is, you don't know</p> <p>5 that any of these talc samples ended up in</p> <p>6 any body powder products, correct?</p> <p>7 A. I don't have that information</p> <p>8 on these.</p> <p>9 MS. O'DELL: Object to form.</p> <p>10 BY MR. KLATT:</p> <p>11 Q. I'm sorry?</p> <p>12 A. I don't have that information</p> <p>13 on these charts.</p> <p>14 Q. Are you aware the Imerys</p> <p>15 supplies talc to many industries that have</p> <p>16 nothing to do with body powder?</p> <p>17 A. I am aware of that.</p> <p>18 Q. Do you understand that there's</p> <p>19 types of talc that are caused -- called</p> <p>20 industrial talc that are not used for</p> <p>21 personal use or cosmetic products?</p> <p>22 A. Yes.</p> <p>23 Q. Do you have any idea which one</p> <p>24 of these on Exhibit 47 might fall into the</p>
Page 415	Page 417
<p>1 A. Yes.</p> <p>2 Q. And those were picked by the</p> <p>3 lawyers and not by you?</p> <p>4 MS. O'DELL: Object to form.</p> <p>5 A. Those were given to me by the</p> <p>6 lawyers.</p> <p>7 BY MR. KLATT:</p> <p>8 Q. You said earlier -- you</p> <p>9 referred to Julie Pier, an Imerys scientist,</p> <p>10 her Exhibit 47 in her MDL deposition. Do you</p> <p>11 recall that?</p> <p>12 A. Yes.</p> <p>13 Q. You can't point to me to a</p> <p>14 single talc sample that she tested in</p> <p>15 Exhibit 47 that you can show me ended up in</p> <p>16 talc-based body powders, can you?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form.</p> <p>19 A. Can I look at it?</p> <p>20 BY MR. KLATT:</p> <p>21 Q. Sure.</p> <p>22 A. What I see on here is the date,</p> <p>23 what the material was, who did the testing,</p> <p>24 what the sample was, what the test revealed,</p>	<p>1 industrial talc category rather than the</p> <p>2 cosmetic talc category?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 A. It doesn't say on this list</p> <p>6 where the talc falls in.</p> <p>7 BY MR. KLATT:</p> <p>8 Q. And on many of these tests,</p> <p>9 there's not even any asbestos identified at</p> <p>10 all, correct?</p> <p>11 A. On some of them.</p> <p>12 Q. Are you aware that certain</p> <p>13 types of asbestos are ubiquitous in the</p> <p>14 environment?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. I am aware of that.</p> <p>18 BY MR. KLATT:</p> <p>19 Q. And you're aware that when talc</p> <p>20 is tested for asbestos, that there can be</p> <p>21 occasional asbestos particles on the test</p> <p>22 equipment itself, correct?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form. Don't guess. If you know --</p>

<p style="text-align: right;">Page 418</p> <p>1 A. I don't -- I mean, I don't know</p> <p>2 that. I don't have evidence to support that.</p> <p>3 BY MR. KLATT:</p> <p>4 Q. Well, are you aware that in</p> <p>5 various test methodologies testing talc to</p> <p>6 see whether it has asbestos, that those</p> <p>7 methods take into account that there may be</p> <p>8 occasional contamination of the test</p> <p>9 equipment by asbestos that has nothing to do</p> <p>10 with the sample being tested?</p> <p>11 MS. O'DELL: Object to the</p> <p>12 form.</p> <p>13 BY MR. KLATT:</p> <p>14 Q. Are you aware of that?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 Don't speculate, Dr. Wolf. If</p> <p>18 you know, please say so. If you</p> <p>19 don't --</p> <p>20 A. I don't know.</p> <p>21 BY MR. KLATT:</p> <p>22 Q. If you turn over on the back of</p> <p>23 page -- or second page of Exhibit 47 to</p> <p>24 Ms. Pier's deposition.</p>	<p style="text-align: right;">Page 420</p> <p>1 BY MR. KLATT:</p> <p>2 Q. Do you know what that means?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 A. I understand that using</p> <p>6 whatever the ASTM method, that this finding</p> <p>7 would be considered background levels. I</p> <p>8 don't know if that's the same method that was</p> <p>9 used to test this.</p> <p>10 BY MR. KLATT:</p> <p>11 Q. So just in summary, when you</p> <p>12 cited Julie Pier's Exhibit 47 in your report,</p> <p>13 you can't tell Judge Wilson that any of these</p> <p>14 samples on Exhibit 47 ended up in Johnson &amp;</p> <p>15 Johnson baby powder or Shower to Shower,</p> <p>16 correct?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form, assumes facts not in evidence.</p> <p>19 A. I don't have that information.</p> <p>20 BY MR. KLATT:</p> <p>21 Q. Let me ask you about fragrance.</p> <p>22 Can you rule out fragrance as the sole cause</p> <p>23 of ovarian cancer in women who use talc-based</p> <p>24 body powder products?</p>
<p style="text-align: right;">Page 419</p> <p>1 A. Yes.</p> <p>2 Q. Do you see, for example, the</p> <p>3 very last sample says, "finding</p> <p>4 indistinguishable from background levels</p> <p>5 determined using ASTM method D6620-00"? Do</p> <p>6 you see that?</p> <p>7 A. I see that.</p> <p>8 Q. Do you have any idea what that</p> <p>9 method is?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. Well, it's -- on the left side,</p> <p>13 this says "Transmission Electron Microscope</p> <p>14 Analysis." I don't know if that that's the</p> <p>15 same as ASTM or not.</p> <p>16 BY MR. KLATT:</p> <p>17 Q. But do you understand what it</p> <p>18 means when it says, "Finding</p> <p>19 indistinguishable from background levels</p> <p>20 determined using ASTM method D6620-00"? Do</p> <p>21 you know what --</p> <p>22 MS. O'DELL: Excuse me. Object</p> <p>23 to the form.</p> <p>24</p>	<p style="text-align: right;">Page 421</p> <p>1 MS. O'DELL: Object to the</p> <p>2 form.</p> <p>3 A. I believe that fragrance that's</p> <p>4 in the product is inflammatory and</p> <p>5 irritating. I don't know of any evidence</p> <p>6 that has studied that fragrance on its own,</p> <p>7 as to whether on its own it causes ovarian</p> <p>8 cancer or not, or if it were out of the</p> <p>9 product it would cause ovarian cancer or not.</p> <p>10 All I have is the information on the whole</p> <p>11 product.</p> <p>12 BY MR. KLATT:</p> <p>13 Q. Do you know whether asbestos --</p> <p>14 high levels of asbestos in drinking water</p> <p>15 causes ovarian cancer?</p> <p>16 A. I don't believe that oral</p> <p>17 ingestion has been shown to cause ovarian</p> <p>18 cancer.</p> <p>19 Q. So not any -- just any</p> <p>20 exposures to asbestos cause ovarian cancer,</p> <p>21 correct?</p> <p>22 MS. O'DELL: Object to the</p> <p>23 form.</p> <p>24 A. So what I said was, that I</p>

Page 422	Page 424
<p>1 don't think oral ingestion has been shown to</p> <p>2 cause ovarian cancer.</p> <p>3 BY MR. KLATT:</p> <p>4 Q. You're aware that there's been</p> <p>5 studies of drinking -- of ovarian cancer in</p> <p>6 women who consumed high levels of drinking</p> <p>7 water for long periods of time that had high</p> <p>8 levels of asbestos in it, correct?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. Restate that question.</p> <p>12 BY MR. KLATT:</p> <p>13 Q. Yeah, I'm sorry, that was a bad</p> <p>14 question. You're aware there's been studies</p> <p>15 done of women who consumed, over long periods</p> <p>16 of time, drinking water with high levels of</p> <p>17 asbestos in it and had no increased risk of</p> <p>18 ovarian cancer, correct?</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 A. I believe that oral intake of</p> <p>22 asbestos has not been shown to increase the</p> <p>23 risk of ovarian cancer.</p> <p>24</p>	<p>1 BY MR. KLATT:</p> <p>2 Q. Is that Exhibit 10?</p> <p>3 A. It's Exhibit 13. It's here. I</p> <p>4 thought it was here.</p> <p>5 MS. O'DELL: This is my copy.</p> <p>6 What do you have right here?</p> <p>7 THE WITNESS: That's</p> <p>8 Exhibit 13.</p> <p>9 BY MR. KLATT:</p> <p>10 Q. And is 13 the IARC talc</p> <p>11 monograph or the IARC asbestos monograph?</p> <p>12 A. It's the IARC talc one.</p> <p>13 Q. Didn't we mark the -- we did?</p> <p>14 MS. O'DELL: I don't see it.</p> <p>15 MR. SILVER: Let's go off the</p> <p>16 record while we look at the exhibit.</p> <p>17 MS. O'DELL: Well, he's asking</p> <p>18 the questions. We're looking here.</p> <p>19 There's no need to go off the record,</p> <p>20 I don't think.</p> <p>21 MR. SILVER: Mike, let's do it.</p> <p>22 MR. KLATT: Yeah, until we find</p> <p>23 it, let's go off the record, because I</p> <p>24 don't want to waste time looking for</p>
Page 423	Page 425
<p>1 BY MR. KLATT:</p> <p>2 Q. Are you aware of any</p> <p>3 nonoccupational studies of women living in</p> <p>4 the vicinity of asbestos mines that show that</p> <p>5 they had an increased risk of ovarian cancer?</p> <p>6 A. I'm not aware of any data</p> <p>7 that -- studies that show that women living</p> <p>8 near mines, that mine asbestos or talcum</p> <p>9 powder have an increased risk of ovarian</p> <p>10 cancer.</p> <p>11 Q. And, in fact, IARC said it</p> <p>12 based its determination that there was a</p> <p>13 potential link between asbestos and ovarian</p> <p>14 cancer based only on cohort studies of high</p> <p>15 occupational exposure in women, correct?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 If you need to look at the IARC</p> <p>19 monograph, Dr. Wolf, we'll pull it</p> <p>20 out.</p> <p>21 A. So the IARC monograph, I know</p> <p>22 that they looked at -- I can't remember what</p> <p>23 -- if this is the right one or the other one.</p> <p>24 Anyway.</p>	<p>1 it. I thought all the exhibits were</p> <p>2 here.</p> <p>3 MS. O'DELL: Are you going to</p> <p>4 mark it?</p> <p>5 MR. KLATT: No, I thought it's</p> <p>6 already marked.</p> <p>7 MS. BROWN: It's already</p> <p>8 marked.</p> <p>9 MS. O'DELL: Look right there.</p> <p>10 THE WITNESS: That's Dr. Saed's</p> <p>11 paper. This is my CV. This is my</p> <p>12 report. What's this one? There it</p> <p>13 is.</p> <p>14 MS. O'DELL: There it is.</p> <p>15 A. I knew it was there.</p> <p>16 BY MR. KLATT:</p> <p>17 Q. Would you look at page 256, and</p> <p>18 let's identify for the record that you're</p> <p>19 looking at Exhibit 10, which is the portion</p> <p>20 of the IARC 2012 monograph dealing with</p> <p>21 asbestos; is that correct?</p> <p>22 A. Yes.</p> <p>23 Q. And you see over in the</p> <p>24 right-hand column of page 256, it says, "The</p>



Page 426	Page 428
<p>1 IARC Working Group noted a causal association</p> <p>2 between exposure to asbestos and cancer of</p> <p>3 the ovary was clearly established, based on</p> <p>4 five strongly positive cohort mortality</p> <p>5 studies of women with heavy occupational</p> <p>6 exposure to asbestos."</p> <p>7 Correct?</p> <p>8 A. I see that.</p> <p>9 Q. And do you -- can you flip over</p> <p>10 to page 280 of that asbestos IARC monograph.</p> <p>11 A. I don't have 280. I only go to</p> <p>12 274.</p> <p>13 MS. BROWN: I think your</p> <p>14 counsel has the -- did we give you the</p> <p>15 larger copy?</p> <p>16 MS. O'DELL: You gave me this</p> <p>17 copy. But it -- and it's definitely a</p> <p>18 larger one, but let's see what --</p> <p>19 THE WITNESS: I got it. I got</p> <p>20 page 280.</p> <p>21 MS. BROWN: Here's another one</p> <p>22 if you need another one.</p> <p>23 BY MR. KLATT:</p> <p>24 Q. Actually, that's my highlighted</p>	<p>1 BY MR. KLATT:</p> <p>2 Q. I hand you what's marked as</p> <p>3 Exhibit 22.</p> <p>4 A. Page 280.</p> <p>5 Q. And that is the full 2012 IARC</p> <p>6 asbestos monograph that previously Exhibit 10</p> <p>7 was an excerpt from --</p> <p>8 A. Yes.</p> <p>9 Q. -- is that correct?</p> <p>10 A. That's correct.</p> <p>11 Q. And we established that on</p> <p>12 page 256, they said that the link between</p> <p>13 ovarian cancer and asbestos was based on</p> <p>14 heavy occupational exposure to asbestos in</p> <p>15 women, correct?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 BY MR. KLATT:</p> <p>19 Q. Is that correct?</p> <p>20 A. "The Working Group noted that a</p> <p>21 causal association between exposure and</p> <p>22 cancer in the" -- "to asbestos and cancer of</p> <p>23 the ovary was clearly established, based on</p> <p>24 five strongly positive cohort studies of</p>
Page 427	Page 429
<p>1 one. Can I give you this one? I just want</p> <p>2 you to verify that you're looking at the same</p> <p>3 thing that's been marked as Exhibit 10.</p> <p>4 MS. O'DELL: Well, it's</p> <p>5 actually not the same as Exhibit 10,</p> <p>6 because what you provided to her is a</p> <p>7 more comprehensive copy of the</p> <p>8 monograph.</p> <p>9 MR. KLATT: What I provided her</p> <p>10 was the complete asbestos monograph</p> <p>11 that Exhibit 10 is a part of.</p> <p>12 MS. O'DELL: Well, that's my</p> <p>13 point.</p> <p>14 MR. KLATT: Okay.</p> <p>15 MS. O'DELL: It's not the same</p> <p>16 thing. And so just mark it.</p> <p>17 MS. BROWN: Let's just mark it.</p> <p>18 MR. KLATT: Yeah, let's mark</p> <p>19 this as whatever our next exhibit is.</p> <p>20 Do you know what that number</p> <p>21 is?</p> <p>22 (Deposition Exhibit 22 marked</p> <p>23 for identification.)</p> <p>24</p>	<p>1 women with heavy occupational exposure to</p> <p>2 asbestos."</p> <p>3 Yes.</p> <p>4 Q. Now, flip over, if you would,</p> <p>5 to page 280.</p> <p>6 A. Okay. I'm there.</p> <p>7 Q. I believe in the right-hand</p> <p>8 column, this same exact working group, what</p> <p>9 did they say about the relationship between</p> <p>10 talc and ovarian cancer?</p> <p>11 MS. O'DELL: I'm sorry, where</p> <p>12 are you reading, Mike? On 280?</p> <p>13 BY MR. KLATT:</p> <p>14 Q. Do you see --</p> <p>15 MS. O'DELL: Are you reading --</p> <p>16 BY MR. KLATT:</p> <p>17 Q. On page 280, it makes a comment</p> <p>18 about --</p> <p>19 A. They're referencing the IARC</p> <p>20 10.</p> <p>21 Q. Yeah. And what does --</p> <p>22 A. "The association between</p> <p>23 exposure to talc," that one?</p> <p>24 Q. Yes. Can you read that into</p>

<p style="text-align: right;">Page 430</p> <p>1 the record?</p> <p>2 A. "Potential retrograde</p> <p>3 translocation to the ovarian epithelium and</p> <p>4 the development of ovarian cancer" --</p> <p>5 THE REPORTER: Hold on. You're</p> <p>6 going to have to back up --</p> <p>7 THE WITNESS: Okay.</p> <p>8 A. "The association between</p> <p>9 exposure to talc, potential retrograde</p> <p>10 translocation to the ovarian epithelium and</p> <p>11 the development of ovarian cancer is</p> <p>12 controversial."</p> <p>13 And this is referencing IARC</p> <p>14 2010 and this volume.</p> <p>15 Q. So while the IARC working group</p> <p>16 in 2012 said that asbestos exposure is</p> <p>17 related to ovarian cancer based on heavy</p> <p>18 occupational exposure, this same working</p> <p>19 group said the association between exposure</p> <p>20 to talc, retrograde translocation to the</p> <p>21 ovary and development of ovarian cancer is</p> <p>22 controversial, correct?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form.</p>	<p style="text-align: right;">Page 432</p> <p>1 to the ovary, have they?</p> <p>2 A. No. That they're carcinogenic,</p> <p>3 not specifically to the ovary.</p> <p>4 Q. The type of carcinogenicity</p> <p>5 they're referring to with those metals are</p> <p>6 when they're breathed in fumes, correct?</p> <p>7 A. I can't recall.</p> <p>8 Q. Are you aware that chromium is</p> <p>9 an essential trace heavy metal for nutrition?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. I haven't studied nutrition in</p> <p>13 a long time. If I saw a list and saw it on</p> <p>14 there, I can't -- I don't know -- I'm not</p> <p>15 aware of that.</p> <p>16 BY MR. KLATT:</p> <p>17 Q. Chromium's contained in</p> <p>18 multivitamins, isn't it, Dr. Wolf?</p> <p>19 A. I don't know. I don't take</p> <p>20 multivitamins and I don't recommend them to</p> <p>21 my patients.</p> <p>22 Q. Chromium can help control your</p> <p>23 blood sugar, right?</p> <p>24 A. Are you telling me that</p>
<p style="text-align: right;">Page 431</p> <p>1 A. So that was the conclusion of</p> <p>2 the IARC 10 talc --</p> <p>3 BY MR. KLATT:</p> <p>4 Q. And it also refers to the IARC</p> <p>5 2012 asbestos monograph, correct?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 BY MR. KLATT:</p> <p>9 Q. Correct?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. It says "and this volume."</p> <p>13 BY MR. KLATT:</p> <p>14 Q. And this volume is what?</p> <p>15 A. 2012.</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 BY MR. KLATT:</p> <p>19 Q. The -- this volume that you</p> <p>20 just referred to is the 2012 IARC asbestos</p> <p>21 monograph, correct?</p> <p>22 A. That's correct.</p> <p>23 Q. IARC's never said that</p> <p>24 chromium, cobalt or nickel are carcinogenic</p>	<p style="text-align: right;">Page 433</p> <p>1 chromium is released from the pancreas to</p> <p>2 help control blood sugar?</p> <p>3 Q. Do you know what chromium does</p> <p>4 as an essential trace nutrient in the body?</p> <p>5 A. I don't.</p> <p>6 Q. Are you aware of any evidence</p> <p>7 that the chromium levels in the blood or</p> <p>8 tissue of women who use talc-based body</p> <p>9 powder exceeds that in women who never have</p> <p>10 used such products?</p> <p>11 A. I'm not aware that that study</p> <p>12 has been done.</p> <p>13 Q. So you're not aware of any</p> <p>14 evidence of that, correct?</p> <p>15 MS. O'DELL: Objection to the</p> <p>16 form.</p> <p>17 A. I'm not aware that any study</p> <p>18 like that has been performed.</p> <p>19 BY MR. KLATT:</p> <p>20 Q. Are you aware that cobalt is an</p> <p>21 essential part of vitamin B12?</p> <p>22 A. Yes.</p> <p>23 Q. You understand -- you know what</p> <p>24 the Krebs cycle is?</p>

Page 434	Page 436
<p>1 A. I do.</p> <p>2 Q. Do you know that cobalt plays a</p> <p>3 vital role in the Krebs cycle in the human</p> <p>4 body?</p> <p>5 A. It's also been shown to be</p> <p>6 carcinogenic, possibly carcinogenic.</p> <p>7 Q. Has IARC ever said that cobalt</p> <p>8 is possibly carcinogenic to the ovaries?</p> <p>9 A. Not specifically to the</p> <p>10 ovaries.</p> <p>11 Q. Are you aware of any evidence</p> <p>12 that the cobalt levels in the blood or tissue</p> <p>13 of women who use talc-based body powder</p> <p>14 exceeds that in the blood or tissues of women</p> <p>15 who have never used such body powders?</p> <p>16 A. I'm not aware of any studies</p> <p>17 that have been done to show that.</p> <p>18 Q. So you're not aware of any such</p> <p>19 evidence, correct?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 A. I'm not aware of any studies</p> <p>23 that have looked at that.</p> <p>24</p>	<p>1 BY MR. KLATT:</p> <p>2 Q. So you know of no such</p> <p>3 evidence, correct?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 A. I'm not aware of any</p> <p>7 evidence -- any study that's looked at that</p> <p>8 question.</p> <p>9 BY MR. KLATT:</p> <p>10 Q. Would you agree with me that</p> <p>11 foreign particles, other than talc that had</p> <p>12 nothing to do with talc or talc-based body</p> <p>13 powders, can be introduced into the female</p> <p>14 reproductive tract by the activities you</p> <p>15 listed earlier, intercourse, going to the</p> <p>16 bathroom, toilet paper, riding a bike,</p> <p>17 exercising, use of tampons, walking, all</p> <p>18 those activities can introduce non-talc</p> <p>19 foreign particles into the reproductive</p> <p>20 tract?</p> <p>21 A. If they're exposed to the</p> <p>22 perineal tissue, they could.</p> <p>23 Q. Are you aware that pathologists</p> <p>24 hired by these plaintiffs' lawyers have found</p>
Page 435	Page 437
<p>1 BY MR. KLATT:</p> <p>2 Q. Are you aware that nickel is</p> <p>3 found in nuts, dried beans, peas, soybeans,</p> <p>4 grains and chocolate?</p> <p>5 A. I'm not aware of that.</p> <p>6 Q. Are you aware that nickel is</p> <p>7 found in some multivitamins?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. I don't look at the list of</p> <p>11 multivitamins, so I'm going to say I don't</p> <p>12 know.</p> <p>13 BY MR. KLATT:</p> <p>14 Q. Can you tell Judge Wolfson of</p> <p>15 any evidence you know of, that the levels of</p> <p>16 nickel in the blood or tissues of women who</p> <p>17 use talc-based body powders exceeds that in</p> <p>18 the blood or tissues of women who have never</p> <p>19 used such products?</p> <p>20 A. I'm not --</p> <p>21 MS. O'DELL: Excuse me. Object</p> <p>22 to the form.</p> <p>23 A. I'm not aware that any study of</p> <p>24 that nature has been performed.</p>	<p>1 hundreds of foreign particles that have</p> <p>2 nothing to do with talc-based body powders in</p> <p>3 the tissues of women who have ovarian cancer?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 A. I'm not aware of that</p> <p>7 information.</p> <p>8 BY MR. KLATT:</p> <p>9 Q. Would that surprise you?</p> <p>10 A. It would not surprise me.</p> <p>11 Q. Why?</p> <p>12 A. Because I have multiple levels</p> <p>13 of evidence that inert particles can go from</p> <p>14 the vagina and reach the upper</p> <p>15 reproductive -- female reproductive tract.</p> <p>16 Q. Do you have any curiosity</p> <p>17 whether any of these inert particles that</p> <p>18 have nothing to do with talc-based body</p> <p>19 powders, might be responsible for</p> <p>20 inflammation that causes ovarian cancer?</p> <p>21 MS. O'DELL: Object to the</p> <p>22 form.</p> <p>23 A. If I had any evidence in an</p> <p>24 epidemiologic study or concerns that there's</p>

Page 438	Page 440
<p>1 anything else, I would definitely want it</p> <p>2 studied. I've never seen an epidemiologic</p> <p>3 study that suggested that toilet paper or any</p> <p>4 of those other things you mentioned are</p> <p>5 potentially associated with an increased risk</p> <p>6 of ovarian cancer.</p> <p>7 BY MR. KLATT:</p> <p>8 Q. Are you aware in the '60s and</p> <p>9 '70s, that tampons contained asbestos?</p> <p>10 A. I wasn't aware of that.</p> <p>11 MS. O'DELL: You were not or</p> <p>12 you were? I'm sorry.</p> <p>13 THE WITNESS: Was not.</p> <p>14 BY MR. KLATT:</p> <p>15 Q. Have you investigated -- had</p> <p>16 any curiosity about investigating the</p> <p>17 non-talc-based body powder particles that</p> <p>18 women's reproductive tracts may be exposed to</p> <p>19 that can result in ovarian cancer?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 A. I don't have any evidence that</p> <p>23 there's anything else that's been suggested</p> <p>24 that something else could cause ovarian</p>	<p>1 A. Most of it's eliminated out of</p> <p>2 the body. In the vast majority of women,</p> <p>3 some of it goes retrograde.</p> <p>4 Q. And you talked about</p> <p>5 endometriosis earlier, correct?</p> <p>6 A. Yes.</p> <p>7 Q. That's endometrial tissue</p> <p>8 that's already in the uterus that may get</p> <p>9 into the peritoneum, correct?</p> <p>10 MS. O'DELL: Objection.</p> <p>11 A. It's endometrial tissue that</p> <p>12 during the time of menstruation goes back out</p> <p>13 through the fallopian tubes and goes -- it</p> <p>14 can go in the ovaries, in the pelvis,</p> <p>15 anywhere in the abdomen. I've seen it in the</p> <p>16 chest.</p> <p>17 BY MR. KLATT:</p> <p>18 Q. But that endometrial tissue</p> <p>19 starts in the uterus, correct?</p> <p>20 A. That's correct.</p> <p>21 Q. That's halfway up the</p> <p>22 reproductive tract to the ovaries, correct?</p> <p>23 A. That's in the uterus.</p> <p>24 Q. You're not aware of any sort of</p>
Page 439	Page 441
<p>1 cancer, that's introduced through the</p> <p>2 perineum.</p> <p>3 BY MR. KLATT:</p> <p>4 Q. People just haven't looked at</p> <p>5 it, correct?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. Generally, people look at a</p> <p>9 question when they see something that happens</p> <p>10 that suggests that there may be a</p> <p>11 correlation.</p> <p>12 BY MR. KLATT:</p> <p>13 Q. But there's lots of things that</p> <p>14 can cause cancer that haven't been studied</p> <p>15 yet, correct?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 A. I don't know the answer to</p> <p>19 that.</p> <p>20 BY MR. KLATT:</p> <p>21 Q. You would agree with me, that</p> <p>22 during a woman's reproductive years, every</p> <p>23 month she sheds the lining of her uterus and</p> <p>24 it's eliminated out of the body, correct?</p>	<p>1 endometrial tissue coming from the external</p> <p>2 genital area, moving up the vagina, across</p> <p>3 the cervix into the uterus, correct?</p> <p>4 A. Well, there isn't any</p> <p>5 endometrial tissue in the vagina or the</p> <p>6 cervix.</p> <p>7 Q. That's my point. The tissue in</p> <p>8 endometriosis starts in the uterus, correct?</p> <p>9 A. Yes.</p> <p>10 Q. The talc particles that women</p> <p>11 apply when they apply talc, are applied</p> <p>12 externally, correct?</p> <p>13 A. That's correct.</p> <p>14 Q. Okay. And so they're nowhere</p> <p>15 near the uterus when they're applied,</p> <p>16 correct?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form.</p> <p>19 A. Define "near."</p> <p>20 BY MR. KLATT:</p> <p>21 Q. They're on the external genital</p> <p>22 area, correct?</p> <p>23 A. They're on the external genital</p> <p>24 area.</p>

Page 442	Page 444
<p>1 Q. And they have the entire</p> <p>2 vaginal canal between the external genital</p> <p>3 area and then the cervix, correct?</p> <p>4 A. Correct.</p> <p>5 Q. And then they have to cross the</p> <p>6 cervix, correct?</p> <p>7 A. Yeah.</p> <p>8 Q. Before they even get to the</p> <p>9 uterus, correct?</p> <p>10 A. That's correct.</p> <p>11 Q. And they're still not to the</p> <p>12 fallopian tubes or ovaries, right?</p> <p>13 A. That's correct.</p> <p>14 Q. And I understand that you</p> <p>15 testified earlier today, that you don't know</p> <p>16 of a single study that traced talc particles</p> <p>17 placed externally and traced them up the</p> <p>18 vaginal canal, across the cervix, through the</p> <p>19 uterus, up the fallopian tubes to the</p> <p>20 ovaries, correct?</p> <p>21 MS. O'DELL: Object to the</p> <p>22 form.</p> <p>23 A. I'm aware of multiple studies</p> <p>24 of other inert products that cross from the</p>	<p>1 THE VIDEOGRAPHER: Going off</p> <p>2 the record. The time is 5:51 p.m.</p> <p>3 (Recess taken from 5:51 p.m. to</p> <p>4 5:52 p.m.)</p> <p>5 THE VIDEOGRAPHER: Back on the</p> <p>6 record. The time is 5:52 p.m.</p> <p>7 BY MR. KLATT:</p> <p>8 Q. Dr. Wolf, just a quick question</p> <p>9 about your CV. I just want to make sure I'm</p> <p>10 clear. Have you ever held the position of</p> <p>11 full professor at an institution?</p> <p>12 A. Yes.</p> <p>13 Q. Okay. I just wasn't sure. And</p> <p>14 that's listed on your CV; is that correct?</p> <p>15 A. Yes.</p> <p>16 Q. And are you still holding a</p> <p>17 full professorship, or did you give that up</p> <p>18 at some point?</p> <p>19 A. I gave that up.</p> <p>20 Q. When was that?</p> <p>21 A. When I left Banner MD Anderson</p> <p>22 in 2014. I haven't had an academic position</p> <p>23 since then.</p> <p>24 Q. And earlier, you said that you</p>
Page 443	Page 445
<p>1 genital area -- or the vagina, into the</p> <p>2 ovaries and the pelvis. As -- since other</p> <p>3 inert substances do cross that way, it makes</p> <p>4 sense to me that talc or something else,</p> <p>5 other things that we talked about, certainly</p> <p>6 could also.</p> <p>7 BY MR. KLATT:</p> <p>8 Q. But none of those particles</p> <p>9 that you just referred to were applied</p> <p>10 externally, correct?</p> <p>11 A. They were not applied</p> <p>12 externally.</p> <p>13 Q. And talc is, correct?</p> <p>14 A. And talc is. But the vagina is</p> <p>15 open to the outside.</p> <p>16 Q. Any foreign particle, not just</p> <p>17 talc?</p> <p>18 A. Excuse me. Yes. Yes.</p> <p>19 MR. KLATT: Can we go off the</p> <p>20 record for just a second. I think I</p> <p>21 have little, if anything, left.</p> <p>22 MS. O'DELL: Okay.</p> <p>23 MR. KLATT: I just want to look</p> <p>24 through my notes real quick.</p>	<p>1 had seen inflammation when you operated on</p> <p>2 women with ovarian cancer, I think?</p> <p>3 MS. O'DELL: Object to form.</p> <p>4 A. I have seen pathologic slides.</p> <p>5 I look at all the slides of my patients with</p> <p>6 ovarian cancer. And sometimes you see</p> <p>7 inflammation in relationship with the cancer.</p> <p>8 BY MR. KLATT:</p> <p>9 Q. And cancer itself is capable of</p> <p>10 causing inflammation, correct?</p> <p>11 A. Cancer itself can cause</p> <p>12 inflammation.</p> <p>13 MR. KLATT: I think that's all</p> <p>14 the questions I have.</p> <p>15 MS. O'DELL: Let's go off the</p> <p>16 record.</p> <p>17 THE VIDEOGRAPHER: Going off</p> <p>18 the record. The time is 5:54 p.m.</p> <p>19 (Recess taken from 5:54 p.m. to</p> <p>20 6:16 p.m.)</p> <p>21 THE VIDEOGRAPHER: Back on the</p> <p>22 record. The time is 6:16 p.m.</p> <p>23</p> <p>24</p>

Page 446	Page 448
<p>1 EXAMINATION</p> <p>2 BY MS. O'DELL:</p> <p>3 Q. Dr. Wolf, just a few questions</p> <p>4 for you. You were shown two exhibits today,</p> <p>5 Exhibit 20 and Exhibit 21, from a website</p> <p>6 from a company that you were formerly</p> <p>7 employed by. Do you recall those questions</p> <p>8 and exhibits?</p> <p>9 A. Yes.</p> <p>10 Q. And have you had an opportunity</p> <p>11 to review these documents?</p> <p>12 A. Yes.</p> <p>13 Q. And is there anything that's</p> <p>14 contained in the materials that you -- that</p> <p>15 are in these documents that's inaccurate?</p> <p>16 A. No.</p> <p>17 Q. Is there anything about what</p> <p>18 was written here that's inconsistent with any</p> <p>19 of the opinions that you've given in this</p> <p>20 litigation?</p> <p>21 A. No.</p> <p>22 Q. And in terms of the risk</p> <p>23 factors that you touched on in either of</p> <p>24 these two articles, are there any risk</p>	<p>1 Q. And J&amp;J counsel purported to --</p> <p>2 or suggested that FDA's testing of talcum</p> <p>3 powder products, including J&amp;J's talc, had</p> <p>4 resulted in a finding that there was no</p> <p>5 asbestos in baby powder. Do you recall that?</p> <p>6 MS. BROWN: Objection to the</p> <p>7 form.</p> <p>8 A. I recall that.</p> <p>9 BY MS. O'DELL:</p> <p>10 Q. All right. If you'll turn over</p> <p>11 to page 2 of Exhibit 9, did the FDA state</p> <p>12 that the testing that they performed was</p> <p>13 evidence that there was no asbestos in</p> <p>14 cosmetic talc?</p> <p>15 A. Under the results of the FDA</p> <p>16 survey and what they mean, it says they found</p> <p>17 no asbestos fibers or structures in any of</p> <p>18 the samples that they tested, to shorten it</p> <p>19 out. But the results were limited, because</p> <p>20 only four talc suppliers submitted samples,</p> <p>21 and by the number of products tested. The</p> <p>22 next sentence says, "While the FDA finds</p> <p>23 these results informative, they do not prove</p> <p>24 that most or all talc or talc-containing</p>
Page 447	Page 449
<p>1 factors other than family history or</p> <p>2 familial-related risk factors?</p> <p>3 A. In the "How to find the best</p> <p>4 doctor for ovarian cancer" article, I talk</p> <p>5 about familial risk factors, but don't list</p> <p>6 any of the other ones.</p> <p>7 Q. I'm sorry. So you don't</p> <p>8 address lifestyle risk factors such as --</p> <p>9 A. I don't.</p> <p>10 Q. -- as talc or any others?</p> <p>11 A. Or other hormonal risk factors</p> <p>12 or anything else.</p> <p>13 Q. You've talked today about</p> <p>14 talcum powder products. When you've referred</p> <p>15 to talcum powder products, what did you mean</p> <p>16 in your testimony?</p> <p>17 A. Johnson &amp; Johnson baby powder</p> <p>18 and Shower to Shower.</p> <p>19 Q. You also were given a document</p> <p>20 by counsel for J&amp;J. It was Exhibit No. 9.</p> <p>21 It's got a title and it says "Talc." It's</p> <p>22 from the FDA website. Do you have that in</p> <p>23 front of you?</p> <p>24 A. I do.</p>	<p>1 cosmetic products currently marketed in the</p> <p>2 United States are likely to be free of</p> <p>3 asbestos contamination."</p> <p>4 Q. J&amp;J's counsel didn't read that</p> <p>5 sentence to you, did she?</p> <p>6 MS. BROWN: Objection to the</p> <p>7 form.</p> <p>8 A. No.</p> <p>9 BY MS. O'DELL:</p> <p>10 Q. You were also shown a -- what's</p> <p>11 called a PDQ from the National Cancer</p> <p>12 Institute website, Exhibit 18. Do you have</p> <p>13 that in front of you?</p> <p>14 A. I have it.</p> <p>15 Q. And you were asked questions</p> <p>16 about the section that dealt with talc. Do</p> <p>17 you recall that?</p> <p>18 A. Yes.</p> <p>19 Q. And if you'll turn to page 12</p> <p>20 and 13 of 18, there's a section on perineal</p> <p>21 talc exposure.</p> <p>22 A. Yes.</p> <p>23 Q. And what are the references</p> <p>24 that are cited in that section? What numbers</p>



Page 450	Page 452
<p>1 are they?</p> <p>2 A. The reference are numbers 41,</p> <p>3 42, 43, 44 and 45.</p> <p>4 Q. Do you need some water?</p> <p>5 A. Yeah, I need some more.</p> <p>6 Q. And if you'll turn to page 16</p> <p>7 of 18 of Exhibit 18, you'll see it lists</p> <p>8 there references 41 through 45.</p> <p>9 A. Yes.</p> <p>10 Q. And do those appear to be the</p> <p>11 references that the authors at NCI relied on</p> <p>12 in reaching their opinions regarding perineal</p> <p>13 talc use?</p> <p>14 A. Yes.</p> <p>15 Q. And do those include -- excuse</p> <p>16 me. Do those references include the broad</p> <p>17 cross section of evidence that you reviewed</p> <p>18 and considered in reaching your opinions in</p> <p>19 this case?</p> <p>20 MS. BROWN: Objection to the</p> <p>21 form.</p> <p>22 A. No.</p> <p>23 BY MS. O'DELL:</p> <p>24 Q. Are at least two of the five</p>	<p>1 experts regarding the appropriate methodology</p> <p>2 for testing asbestos in talc?</p> <p>3 MS. BROWN: Objection to the</p> <p>4 form.</p> <p>5 A. I would refer to other experts</p> <p>6 in that area.</p> <p>7 BY MS. O'DELL:</p> <p>8 Q. Would you -- would you defer</p> <p>9 to -- back up just a second.</p> <p>10 You were asked questions about</p> <p>11 Dr. Longo and Rigler's report in the MDL.</p> <p>12 A. Yes.</p> <p>13 Q. And you recall in Dr. Longo and</p> <p>14 Rigler's report, that they do perform a</p> <p>15 quantification or an estimate of the number</p> <p>16 of fibers in a particular bottle if there's a</p> <p>17 positive test. Do you recall those?</p> <p>18 A. Yes.</p> <p>19 MS. BROWN: Objection to the</p> <p>20 form.</p> <p>21 BY MS. O'DELL:</p> <p>22 Q. Would you defer to Dr. Longo</p> <p>23 and Dr. Rigler on calculations like that, in</p> <p>24 terms of the specific composition of a</p>
Page 451	Page 453
<p>1 references in early 2000s, I think 2000 and</p> <p>2 2003?</p> <p>3 A. 2003, 2013. Schildkraut, which</p> <p>4 is the newest one that they just added, 2016,</p> <p>5 2000, 2014.</p> <p>6 Q. Yes. And the references</p> <p>7 included here certainly do not cover all the</p> <p>8 material that you reviewed, considered,</p> <p>9 relied on in reaching your opinion, including</p> <p>10 other meta-analyses, the mechanistic data, et</p> <p>11 cetera?</p> <p>12 A. They do not include all of the</p> <p>13 data that I considered, and the most recent</p> <p>14 data that's even mentioned, as I said, is the</p> <p>15 2016 Schildkraut study.</p> <p>16 Q. Put that aside.</p> <p>17 You were asked a number of</p> <p>18 questions about asbestos testing, the type of</p> <p>19 testing, the methodology, whether it was</p> <p>20 transmission electron microscope or XRD, I</p> <p>21 think was asked of you. Do you recall those</p> <p>22 series of questions?</p> <p>23 A. I do.</p> <p>24 Q. And would you defer to other</p>	<p>1 specific bottle?</p> <p>2 MS. BROWN: Objection to the</p> <p>3 form.</p> <p>4 A. Yes.</p> <p>5 BY MS. O'DELL:</p> <p>6 Q. As a GYN oncologist,</p> <p>7 gynecologic oncologist, that's not something</p> <p>8 that you're offering opinions on or that</p> <p>9 would be within your expertise, correct?</p> <p>10 MS. BROWN: Form.</p> <p>11 A. That's not something I'm</p> <p>12 offering opinions on or is within my area of</p> <p>13 expertise.</p> <p>14 BY MS. O'DELL:</p> <p>15 Q. Okay. And you would not --</p> <p>16 would defer to Dr. Longo and Dr. Rigler on</p> <p>17 that point?</p> <p>18 A. I would refer to Dr. Longo and</p> <p>19 Dr. Rigler.</p> <p>20 Q. And in regard to questions you</p> <p>21 received about geology or deposits, talc</p> <p>22 deposits, would you defer to experts in</p> <p>23 geology on those particular matters?</p> <p>24 A. Yes.</p>

Page 454	Page 456
<p>1 MS. BROWN: Form.</p> <p>2 MS. O'DELL: I don't know what</p> <p>3 the form objection is, but let me see</p> <p>4 if I can address it.</p> <p>5 BY MS. O'DELL:</p> <p>6 Q. Dr. Wolf, would you defer to</p> <p>7 geology experts in terms of the composition</p> <p>8 of the particular talc ore deposit?</p> <p>9 A. A talc deposit?</p> <p>10 Q. Yes.</p> <p>11 A. Yes.</p> <p>12 Q. You were also asked by</p> <p>13 Mr. Klatt about adhesions and inflammation,</p> <p>14 acute inflammation following a surgical</p> <p>15 procedure. Is there any evidence -- any</p> <p>16 suggestion that acute inflammation following</p> <p>17 a surgical procedure causes ovarian cancer?</p> <p>18 A. No.</p> <p>19 Q. Let me -- you were asked some</p> <p>20 questions about the IARC monograph, Volume</p> <p>21 93, the 2010 monograph. It was marked as</p> <p>22 Exhibit 13.</p> <p>23 A. This one. Yes.</p> <p>24 Q. And, Dr. Wolf, was IARC's</p>	<p>1 the literature, the totality of the evidence,</p> <p>2 can platy talc cause inflammation?</p> <p>3 A. Yes.</p> <p>4 Q. Does inflammation in the ovary</p> <p>5 cause ovarian cancer?</p> <p>6 A. Chronic inflammation in the</p> <p>7 ovary can cause changes that are associated</p> <p>8 with ovarian cancer, yes. Chronic</p> <p>9 inflammation can -- in the ovary can cause</p> <p>10 ovarian cancer.</p> <p>11 Q. You asked a number of questions</p> <p>12 about asbestos and -- in terms of studies</p> <p>13 involving millers and miners. Would you</p> <p>14 explain to what ultimately would be a jury,</p> <p>15 but initially will be Judge Wolfson, what the</p> <p>16 possible routes of exposure are for, you</p> <p>17 know, asbestos and fibrous talc reaching the</p> <p>18 ovary in the context of talcum powder</p> <p>19 products?</p> <p>20 MS. BROWN: Objection to the</p> <p>21 form.</p> <p>22 A. So the possible routes are from</p> <p>23 the perineum, through the open vagina and</p> <p>24 open cervix and open fallopian tubes to the</p>
Page 455	Page 457
<p>1 examination of talc at the time they looked</p> <p>2 at it in 2006, I believe it was, were they</p> <p>3 considering talc containing asbestiform</p> <p>4 fibers?</p> <p>5 MR. KLATT: Objection, form.</p> <p>6 BY MS. O'DELL:</p> <p>7 Q. Let me just ask -- let me ask</p> <p>8 you a different way, see if I can address the</p> <p>9 objection.</p> <p>10 Why don't you turn to page 277,</p> <p>11 please. And, Dr. Wolf, what is the substance</p> <p>12 that the IARC working group is considering in</p> <p>13 the 2010 monograph?</p> <p>14 A. Talc not containing asbestos</p> <p>15 foreign fibers.</p> <p>16 Q. In other words, the 2010</p> <p>17 monograph purported not to address talc with</p> <p>18 asbestos?</p> <p>19 MS. BROWN: Objection, form.</p> <p>20 MR. KLATT: Objection, form.</p> <p>21 A. To investigate what they</p> <p>22 thought or assumed was pure platy talc.</p> <p>23 BY MS. O'DELL:</p> <p>24 Q. Is -- based on your review of</p>	<p>1 ovaries. From inhalation, smaller particles</p> <p>2 can be -- cross the membrane, be absorbed by</p> <p>3 the stroma, get into the lymphatic or blood</p> <p>4 system and get it that way. Fibrous</p> <p>5 particles can pierce the lung in the diagram</p> <p>6 and get into the perineal cavity that way.</p> <p>7 BY MS. O'DELL:</p> <p>8 Q. And is -- are those opinions</p> <p>9 you've just expressed supported by the data</p> <p>10 in the IARC monograph, the 2012 monograph?</p> <p>11 A. Yes.</p> <p>12 MR. KLATT: Objection, form.</p> <p>13 BY MS. O'DELL:</p> <p>14 Q. And did IARC conclude that when</p> <p>15 asbestos and fibrous talc reached the</p> <p>16 ovaries, they can cause ovarian cancer?</p> <p>17 A. Yes.</p> <p>18 Q. And IARC concluded that</p> <p>19 asbestos and fibrous talc were known human</p> <p>20 carcinogens?</p> <p>21 A. Yes.</p> <p>22 Q. You were asked a number of</p> <p>23 questions about whether asbestos was</p> <p>24 necessary in order to reach your opinions</p>

Page 458	Page 460
<p>1 about talcum powder products causing ovarian</p> <p>2 cancer. You recall those questions?</p> <p>3 A. Yes.</p> <p>4 Q. And is asbestos, as a component</p> <p>5 of talcum powder products, essential in order</p> <p>6 for talcum powder, baby powder and Shower to</p> <p>7 Shower causing ovarian cancer?</p> <p>8 MS. BROWN: Objection to the</p> <p>9 form of the question.</p> <p>10 A. So a talcum powder product has</p> <p>11 all of these substance and I assessed it as a</p> <p>12 whole. Multiple of the substances are either</p> <p>13 known to be carcinogenic or other substances</p> <p>14 possibly carcinogenic or fragrances</p> <p>15 irritating and inflammatory. I looked at the</p> <p>16 product as a whole.</p> <p>17 BY MS. O'DELL:</p> <p>18 Q. If-- and you -- and in doing</p> <p>19 that, looking at the product as a whole, was</p> <p>20 it important to you to consider whether there</p> <p>21 was a potent carcinogen such as asbestos in</p> <p>22 the product?</p> <p>23 MS. BROWN: Form.</p> <p>24 A. It was information that added</p>	<p>1 MS. BROWN: Objection to the</p> <p>2 form of the question.</p> <p>3 BY MS. O'DELL:</p> <p>4 Q. And did Dr. Longo find that</p> <p>5 there was fibrous talc present in 41 out of</p> <p>6 42 samples?</p> <p>7 MS. BROWN: Objection.</p> <p>8 A. She found fibrous talc in 41 of</p> <p>9 42 samples.</p> <p>10 THE REPORTER: Hold on a</p> <p>11 second. I'm not hearing --</p> <p>12 THE WITNESS: I'm sorry.</p> <p>13 A. She --</p> <p>14 MS. BROWN: I -- sorry. Go</p> <p>15 ahead.</p> <p>16 A. She found fibrous talc in 41</p> <p>17 of --</p> <p>18 MS. BROWN: He.</p> <p>19 A. He. I keep picturing a woman.</p> <p>20 Fibrous talc in 41 of 42 samples.</p> <p>21 MS. BROWN: And, Doctor, if you</p> <p>22 wouldn't mind just giving me second to</p> <p>23 object before you start answering --</p> <p>24 THE WITNESS: I'm sorry.</p>
Page 459	Page 461
<p>1 to my concerns about the product. But</p> <p>2 knowing that platy talc can cause</p> <p>3 inflammation and is possibly carcinogenic, as</p> <p>4 per IARC, and that platy talc appears to be</p> <p>5 almost universally, as per Longo's testing,</p> <p>6 part of talcum powder product, 41 out of 42</p> <p>7 samples that she tested, and that fibrous</p> <p>8 talc is asbestos, a form of asbestos, the</p> <p>9 other asbestos fibers, one way or the other,</p> <p>10 just add to my concern.</p> <p>11 BY MS. O'DELL:</p> <p>12 Q. Yeah. You -- and just when you</p> <p>13 were relying, I think you misspoke. You were</p> <p>14 saying the 41 out of 42 samples in</p> <p>15 Dr. Longo's testing and you referred to platy</p> <p>16 talc. Did you mean to say that?</p> <p>17 MS. BROWN: Objection to the</p> <p>18 form.</p> <p>19 A. No, I meant fibrous talc.</p> <p>20 BY MS. O'DELL:</p> <p>21 Q. And Dr. Longo tested Johnson &amp;</p> <p>22 Johnson historical samples for the presence</p> <p>23 of fibrous talc?</p> <p>24 A. That's correct.</p>	<p>1 MS. BROWN: -- it will make the</p> <p>2 court reporter's job easier.</p> <p>3 THE WITNESS: Sorry.</p> <p>4 BY MS. O'DELL:</p> <p>5 Q. And if you pulled any one</p> <p>6 component that you've talked about today out</p> <p>7 of the talcum powder products, would that</p> <p>8 change your opinions?</p> <p>9 A. No.</p> <p>10 MS. O'DELL: That's all I have,</p> <p>11 Dr. Wolf. Thank you.</p> <p>12 MS. BROWN: Go off?</p> <p>13 MR. KLATT: Yeah.</p> <p>14 MS. BROWN: Can we go off for</p> <p>15 one second?</p> <p>16 THE VIDEOGRAPHER: Going off</p> <p>17 the record. The time is 6:36 p.m.</p> <p>18 (Recess taken from 6:36 p.m. to</p> <p>19 6:44 p.m.)</p> <p>20 THE VIDEOGRAPHER: Back on the</p> <p>21 record. The time is 6:44 p.m.</p> <p>22 FURTHER EXAMINATION</p> <p>23 BY MS. BROWN:</p> <p>24 Q. Dr. Wolf, you were just asked</p>

Page 462	Page 464
<p>1 some questions by counsel for plaintiffs</p> <p>2 regarding Exhibits 20 and 21, articles that</p> <p>3 you authored regarding ovarian cancer. Do</p> <p>4 you recall those questions?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. And you'd agree with me</p> <p>7 that over the course of your career, you have</p> <p>8 authored a number of articles, both in the</p> <p>9 medical press and in the popular press,</p> <p>10 regarding ovarian cancer, correct?</p> <p>11 A. Yes.</p> <p>12 Q. And you have never, over the</p> <p>13 course of your entire career, published the</p> <p>14 opinion that talc causes ovarian cancer,</p> <p>15 correct?</p> <p>16 A. I have not.</p> <p>17 Q. And you have never, over the</p> <p>18 course of your career, blogged or tweeted or</p> <p>19 posted anything on any of the social media</p> <p>20 accounts where you have a presence, that talc</p> <p>21 causes ovarian cancer, correct?</p> <p>22 A. I have not.</p> <p>23 Q. And you have never spoken at</p> <p>24 any symposia or conference and offered the</p>	<p>1 was in her testing. I don't remember the</p> <p>2 word "quantification of asbestos."</p> <p>3 BY MS. BROWN:</p> <p>4 Q. So you are relying on</p> <p>5 Dr. Longo's testing for how much asbestos is</p> <p>6 in baby powder?</p> <p>7 A. To interpret her findings.</p> <p>8 MS. O'DELL: His findings.</p> <p>9 A. His findings. I'm trying to</p> <p>10 make Dr. Longo a woman. It's not working.</p> <p>11 BY MS. BROWN:</p> <p>12 Q. You -- in sitting here -- and</p> <p>13 when you offered your opinion in this case,</p> <p>14 though, you didn't have in mind a certain</p> <p>15 amount of asbestos that was needed or found</p> <p>16 in the baby powder to cause ovarian cancer,</p> <p>17 right?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 A. Any amount of asbestos in baby</p> <p>21 talcum powder product, I'm concerned about</p> <p>22 causing ovarian cancer.</p> <p>23 BY MS. BROWN:</p> <p>24 Q. And if I understood your</p>
Page 463	Page 465
<p>1 opinion that talc causes ovarian cancer,</p> <p>2 correct?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form. It's already been covered</p> <p>5 previously today.</p> <p>6 MS. BROWN: Form is the</p> <p>7 objection.</p> <p>8 A. Not that I recall.</p> <p>9 BY MS. BROWN:</p> <p>10 Q. You were asked some questions</p> <p>11 regarding the work of Dr. Longo and</p> <p>12 Dr. Rigler. Do you recall those?</p> <p>13 A. Yes.</p> <p>14 Q. And I assume you have not met</p> <p>15 Dr. Longo; is that correct?</p> <p>16 A. No, I have not.</p> <p>17 Q. Okay. And you told counsel for</p> <p>18 plaintiffs, that you are relying on</p> <p>19 Dr. Longo's quantification of asbestos. Was</p> <p>20 that your testimony?</p> <p>21 MS. O'DELL: Object to the</p> <p>22 form.</p> <p>23 A. Quantification of -- to</p> <p>24 understand how much of the -- what she found</p>	<p>1 testimony to plaintiffs' lawyer earlier, if</p> <p>2 you took asbestos -- the asbestos that you</p> <p>3 think is in baby powder, if you took it out,</p> <p>4 you would still hold the opinion that baby</p> <p>5 powder causes ovarian cancer; is that right?</p> <p>6 A. Yes.</p> <p>7 Q. And, in fact, that's your</p> <p>8 opinion as it relates to any of the</p> <p>9 components of baby powder that you believe</p> <p>10 exists, such as platy talc, fibrous talc,</p> <p>11 asbestos, heavy metals and fragrances,</p> <p>12 correct?</p> <p>13 MS. O'DELL: Object to the</p> <p>14 form.</p> <p>15 A. If I took any one of those out,</p> <p>16 I think that talcum powder products would</p> <p>17 still cause ovarian cancer.</p> <p>18 BY MS. BROWN:</p> <p>19 Q. And what if you took two out of</p> <p>20 the five out, would you still hold the</p> <p>21 opinion that powder products cause ovarian</p> <p>22 cancer?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form, incomplete hypothetical.</p>

Page 466	Page 468
<p>1 A. If you took any one of them</p> <p>2 out, I would still have the opinion that</p> <p>3 talcum powder product causes ovarian cancer.</p> <p>4 I don't know how you can take all of them out</p> <p>5 and still have a talcum powder product.</p> <p>6 BY MS. BROWN:</p> <p>7 Q. Well, you understand that there</p> <p>8 is -- talcum powder exists that does not</p> <p>9 include fragrances, heavy metals, asbestos</p> <p>10 and fibrous talc. Do you have that</p> <p>11 understanding?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. I'm not sure that there's</p> <p>15 talcum powder that doesn't have at least</p> <p>16 fibrous talc.</p> <p>17 BY MS. BROWN:</p> <p>18 Q. And so are you of the opinion</p> <p>19 that platy talc and fibrous talc alone cause</p> <p>20 ovarian cancer?</p> <p>21 MS. O'DELL: Object to the</p> <p>22 form.</p> <p>23 A. I'm of the opinion that talcum</p> <p>24 powder product contains all of those</p>	<p>1 A. There isn't epidemiology</p> <p>2 because -- because I don't know that the</p> <p>3 talcum powder product in the epidemiology</p> <p>4 left any of those out.</p> <p>5 Q. So you issued a multipage</p> <p>6 report in this case, right, Dr. Wolf?</p> <p>7 A. Yes.</p> <p>8 Q. And that report contains</p> <p>9 numerous cites to epidemiology that looked at</p> <p>10 people using cosmetic talcum powder, correct?</p> <p>11 A. That's correct.</p> <p>12 Q. Is it your testimony here today</p> <p>13 that none of that epidemiology informs your</p> <p>14 opinion about Johnson &amp; Johnson baby powder</p> <p>15 products?</p> <p>16 A. That is not --</p> <p>17 MS. O'DELL: Excuse me.</p> <p>18 A. -- my opinion.</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form, misstates her testimony.</p> <p>21 A. What my understanding of your</p> <p>22 question was is, do I have epidemiologic</p> <p>23 studies that show that if one -- any one of</p> <p>24 those substances is left out of the product,</p>
Page 467	Page 469
<p>1 ingredients that we list and that it causes</p> <p>2 ovarian cancer.</p> <p>3 BY MS. BROWN:</p> <p>4 Q. I'm with you on that. What I</p> <p>5 want to know is, are you of the opinion that</p> <p>6 platy talc and fibrous talc alone cause</p> <p>7 ovarian cancer?</p> <p>8 A. I'm of the opinion that platy</p> <p>9 talc can cause cancer and fibrous talc is</p> <p>10 considered a form of asbestos and can cause</p> <p>11 cancer. And that those are two of the</p> <p>12 products in talcum powder product, two of the</p> <p>13 substances in talcum powder product.</p> <p>14 I don't know of any evidence</p> <p>15 that the product doesn't have all of the</p> <p>16 substances that I've described, and I don't</p> <p>17 know that I can make an opinion that says if</p> <p>18 it just had this and this, it would or would</p> <p>19 not cause cancer.</p> <p>20 Q. And for your opinion, that if</p> <p>21 you pulled out any one component of the</p> <p>22 powder products, the product would still</p> <p>23 cause ovarian cancer, do you rely on the same</p> <p>24 epidemiology?</p>	<p>1 that it causes ovarian cancer. And what my</p> <p>2 answer is, is that my understanding is that</p> <p>3 all of the epidemiologic studies are looking</p> <p>4 at the product as I understand it and so I</p> <p>5 can't give -- I cannot refer to a study that</p> <p>6 has the product without one of those.</p> <p>7 BY MS. BROWN:</p> <p>8 Q. And you were asked some</p> <p>9 questions about the IARC monograph on</p> <p>10 nonasbestiform talc. Do you remember that?</p> <p>11 A. Yes.</p> <p>12 Q. And many, if not most, of the</p> <p>13 epidemiology studies that you cite in your</p> <p>14 report are contained and considered within</p> <p>15 the IARC monograph on nonasbestiform talc.</p> <p>16 True?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form.</p> <p>19 A. I believe that's not true</p> <p>20 because the -- again, this was 2010 and many</p> <p>21 of the references that I report are after</p> <p>22 this was published and they were only</p> <p>23 reviewing up to 2006 or 2007 when they wrote</p> <p>24 this.</p>



Page 470	Page 472
<p>1 BY MS. BROWN:</p> <p>2 Q. Sure. And for studies that</p> <p>3 looked at talcum powder products prior to</p> <p>4 2010, you have considered and relied on those</p> <p>5 in your report as well?</p> <p>6 A. Yes.</p> <p>7 Q. And, in fact, the Penninkilampi</p> <p>8 meta-analysis that you regard as high</p> <p>9 quality, includes a majority of studies that</p> <p>10 were considered by the IARC group in 2006,</p> <p>11 correct?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. It definitely includes some of</p> <p>15 those older studies.</p> <p>16 MS. BROWN: I have no further</p> <p>17 questions at this time.</p> <p>18 MR. KLATT: I have a couple</p> <p>19 more.</p> <p>20 FURTHER EXAMINATION</p> <p>21 BY MR. KLATT:</p> <p>22 Q. Can you pull out Exhibit 9,</p> <p>23 Dr. Wolf.</p> <p>24 A. Exhibit 9, yes.</p>	<p>1 A. That's correct.</p> <p>2 Q. Have you ever recommended to a</p> <p>3 patient of yours who does not have ovarian</p> <p>4 cancer yet, that she have her ovaries removed</p> <p>5 because of long-term talc use?</p> <p>6 A. No.</p> <p>7 Q. Would you make that</p> <p>8 recommendation in the future?</p> <p>9 A. It would be a discussion that I</p> <p>10 would have with the patient. Looking at all</p> <p>11 of her risk factors, if her only risk factor</p> <p>12 was talcum powder usage, I would just want</p> <p>13 her to know that she's at an increased risk</p> <p>14 and let her make the decision about that.</p> <p>15 Q. Are you aware of any</p> <p>16 professional --</p> <p>17 MS. O'DELL: Excuse me, Mike.</p> <p>18 MR. KLATT: I'm sorry.</p> <p>19 MS. O'DELL: I'm sorry. Were</p> <p>20 you done, Dr. Wolf?</p> <p>21 A. I mean, that's a tough</p> <p>22 question. The challenge is there's no</p> <p>23 screening for ovarian cancer, right? So if</p> <p>24 you have someone who's at an increased risk,</p>
Page 471	Page 473
<p>1 Q. And Exhibit 9 is the document</p> <p>2 that Ms. O'Dell discussed with you a few</p> <p>3 minutes ago, where the FDA around 2009-2010,</p> <p>4 tested both raw talc and off-the-shelf</p> <p>5 talc-based body powder products, correct?</p> <p>6 A. Yes.</p> <p>7 Q. And I think you read a portion</p> <p>8 where it said only four talc suppliers had</p> <p>9 submitted their products to the FDA for</p> <p>10 testing. Do you recall that?</p> <p>11 A. Yes.</p> <p>12 Q. Are you aware that my client,</p> <p>13 Imerys, was one of the four that did submit</p> <p>14 their talc for testing? And I'll just tell</p> <p>15 you, in case you don't know, that Imerys is</p> <p>16 the successor to Rio Tinto and Luzenac. And</p> <p>17 are those talcs tested by the FDA in Exhibit</p> <p>18 9?</p> <p>19 A. Yes.</p> <p>20 Q. And what did the FDA find about</p> <p>21 whether there was asbestos in those talcs?</p> <p>22 A. No evidence of asbestos.</p> <p>23 Q. In either the Rio Tinto</p> <p>24 Minerals/Luzenac America talc, correct?</p>	<p>1 you can't say, well, we'll look at you more</p> <p>2 often, we'll test you more often. There's no</p> <p>3 test to find ovarian cancer early.</p> <p>4 On the other hand, the</p> <p>5 generally accepted lifetime risk for ovarian</p> <p>6 cancer to push a doctor to recommend</p> <p>7 prophylactic surgery removal of the tubes and</p> <p>8 ovaries, is a 10 percent or greater lifetime</p> <p>9 risk.</p> <p>10 BY MR. KLATT:</p> <p>11 Q. And talc use doesn't confer</p> <p>12 that level of use, correct?</p> <p>13 A. It does not.</p> <p>14 Q. Okay. And you're not aware of</p> <p>15 any medical professional organization or</p> <p>16 agency that has ever made the recommendation</p> <p>17 that women who have used genital talc for a</p> <p>18 certain period of time should consider having</p> <p>19 their ovaries and fallopian tubes removed,</p> <p>20 correct?</p> <p>21 A. I am not aware of any.</p> <p>22 Q. Can you show me one single</p> <p>23 study, case report, case series, any type of</p> <p>24 study at all, showing that a woman who used</p>



Page 474	Page 476
<p>1 Johnson &amp; Johnson baby powder or Shower to</p> <p>2 Shower product, had inflammation of her</p> <p>3 reproductive tract as a result of that</p> <p>4 powder?</p> <p>5 MS. O'DELL: Objection to the</p> <p>6 form.</p> <p>7 A. I can't -- I can't show you a</p> <p>8 paper that shows that.</p> <p>9 BY MR. KLATT:</p> <p>10 Q. You believe that talc can get</p> <p>11 to the ovaries via inhalation, correct?</p> <p>12 A. Yes.</p> <p>13 Q. Are you aware that talc's</p> <p>14 ubiquitous in the environment?</p> <p>15 A. Yes.</p> <p>16 Q. Are you aware that women just</p> <p>17 walking around on city streets can breathe</p> <p>18 talc particles in during the course of their</p> <p>19 life?</p> <p>20 MS. O'DELL: Objection to form.</p> <p>21 A. I'm aware that talc is</p> <p>22 ubiquitous to the environment.</p> <p>23 BY MR. KLATT:</p> <p>24 Q. Which means you can breathe it</p>	<p>1 Q. Sure. You've seen -- you've</p> <p>2 read the IARC monograph, you know in indoor</p> <p>3 air and outdoor air in urban areas, there's</p> <p>4 concentrations of asbestos fibers just in the</p> <p>5 air we breath.</p> <p>6 MS. O'DELL: Objection to form.</p> <p>7 A. I would have to test the air to</p> <p>8 know for sure that there's asbestos fibers in</p> <p>9 the air here.</p> <p>10 BY MR. KLATT:</p> <p>11 Q. You haven't seen that data in</p> <p>12 the IARC monograph that you reviewed?</p> <p>13 A. In this -- about the air in</p> <p>14 this room, no.</p> <p>15 Q. I'm talking about indoor air</p> <p>16 and outdoor area in urban areas. You've seen</p> <p>17 in the IARC monograph, that there's a certain</p> <p>18 quantity of asbestos fibers in that air,</p> <p>19 correct?</p> <p>20 A. There is a certain amount of</p> <p>21 asbestos fibers in the air.</p> <p>22 Q. And so when you breathe that</p> <p>23 air, you can inhale those asbestos fibers</p> <p>24 and, according to you, they can end up in the</p>
Page 475	Page 477
<p>1 in every single breath you take, correct?</p> <p>2 MS. O'DELL: Object to the</p> <p>3 form.</p> <p>4 A. I'm aware that talc is</p> <p>5 ubiquitous to the environment.</p> <p>6 BY MR. KLATT:</p> <p>7 Q. And so since it's ubiquitous in</p> <p>8 the environment and since you take a breath,</p> <p>9 you know, many times a minute, you're</p> <p>10 probably inhaling talc particles every time</p> <p>11 you breath, or at least every minute you</p> <p>12 breath, correct?</p> <p>13 MS. O'DELL: Objection to the</p> <p>14 form.</p> <p>15 A. I don't have evidence to</p> <p>16 support that.</p> <p>17 BY MR. KLATT:</p> <p>18 Q. Well, you -- and you know, for</p> <p>19 example, that there's asbestos fibers in this</p> <p>20 room as we sit here right now, don't you, Dr.</p> <p>21 Wolf?</p> <p>22 MS. O'DELL: Objection to form.</p> <p>23 A. Do I know that for a fact?</p> <p>24 BY MR. KLATT:</p>	<p>1 ovary, correct?</p> <p>2 A. Yes.</p> <p>3 Q. And the same with talc</p> <p>4 particles, correct?</p> <p>5 A. Yes.</p> <p>6 Q. Didn't even necessarily come</p> <p>7 from body powder, correct --</p> <p>8 MS. O'DELL: Objection, form.</p> <p>9 BY MR. KLATT:</p> <p>10 Q. -- just from the environment?</p> <p>11 MS. O'DELL: Objection to the</p> <p>12 form.</p> <p>13 A. You can inhale it from the air</p> <p>14 and it can get to the ovaries.</p> <p>15 BY MR. KLATT:</p> <p>16 Q. How long have you known</p> <p>17 Margaret Thompson, who is sitting here today?</p> <p>18 A. I met her about two -- a little</p> <p>19 over two years ago.</p> <p>20 Q. Okay. You've never seen or</p> <p>21 been referred any patients by her; is that</p> <p>22 correct?</p> <p>23 A. No.</p> <p>24 Q. Have you communicated with any</p>

Page 478	Page 480
<p>1 of the other plaintiffs' consultants by -- in</p> <p>2 person, by phone, by e-mail, in any form or</p> <p>3 fashion at all?</p> <p>4 A. The only one I spoke with was</p> <p>5 Dr. Saed. I spoke on the phone with him once</p> <p>6 about, I'm going to say, a year or so ago.</p> <p>7 Q. And what was the substance of</p> <p>8 that conversation?</p> <p>9 A. It was about his research. I</p> <p>10 had questions about what he was doing.</p> <p>11 Q. And what did you ask him?</p> <p>12 A. I don't recall exactly.</p> <p>13 Q. Did you keep notes?</p> <p>14 A. I did not.</p> <p>15 Q. How long was the phone call?</p> <p>16 A. I think it was about a half an</p> <p>17 hour.</p> <p>18 Q. And when was that phone call?</p> <p>19 MS. O'DELL: I think she just</p> <p>20 said.</p> <p>21 A. I think it was about a year</p> <p>22 ago. I can see I was standing in Arizona,</p> <p>23 which meant I was still working for Provista,</p> <p>24 so it was sometime before I left there.</p>	<p>1 talked a little bit about the fact that he</p> <p>2 worked in Detroit at Wayne State, where I</p> <p>3 know the GYN oncologist, and we were friendly</p> <p>4 about that. I told him I thought his</p> <p>5 research was interesting and important. That</p> <p>6 was it.</p> <p>7 Q. Are any of the Wayne State</p> <p>8 gynecologic oncologists you know coauthors of</p> <p>9 Dr. Saed's paper?</p> <p>10 A. Yes. Dr. Robert Morris.</p> <p>11 Q. Have you talked to Dr. Morris</p> <p>12 about this research?</p> <p>13 A. I haven't spoken with</p> <p>14 Dr. Morris about anything in a couple of</p> <p>15 years.</p> <p>16 Q. Have you communicated in any</p> <p>17 form or fashion with any governmental</p> <p>18 agencies about talc and ovarian cancer?</p> <p>19 A. I have not.</p> <p>20 Q. Did you keep any notes of your</p> <p>21 discussion with Dr. Saed? Maybe I asked</p> <p>22 that.</p> <p>23 MS. O'DELL: Asked and</p> <p>24 answered.</p>
Page 479	Page 481
<p>1 BY MR. KLATT:</p> <p>2 Q. Which month would that have</p> <p>3 been?</p> <p>4 A. I don't know.</p> <p>5 Q. When did you leave there?</p> <p>6 A. My last working day there was</p> <p>7 October 1st, but I hadn't been to Arizona for</p> <p>8 months by then.</p> <p>9 Q. October 1st of?</p> <p>10 A. 2018.</p> <p>11 Q. Okay. But you think it was</p> <p>12 about a year ago that you spoke to him?</p> <p>13 A. I do.</p> <p>14 Q. Approximately January of 2018?</p> <p>15 MS. O'DELL: Objection to form.</p> <p>16 She's given her best estimate.</p> <p>17 A. Approximately.</p> <p>18 BY MR. KLATT:</p> <p>19 Q. Can you tell me anything else</p> <p>20 about the substance of what you talked about</p> <p>21 with Dr. Saed on that phone call?</p> <p>22 A. I asked him what research he</p> <p>23 was doing, what he was looking at, what type</p> <p>24 of cell lines, what was he looking for. We</p>	<p>1 A. I did not.</p> <p>2 BY MR. KLATT:</p> <p>3 Q. Did you ask Dr. Saed during</p> <p>4 that phone call, who was funding his</p> <p>5 experiments or work that he was doing?</p> <p>6 A. I don't remember.</p> <p>7 Q. What prompted that phone call?</p> <p>8 A. Margaret and I spoke about that</p> <p>9 he was doing some research and she asked him</p> <p>10 would it be okay if I talked to him, and so I</p> <p>11 called him.</p> <p>12 Q. How long have you been a</p> <p>13 gynecologic oncologist?</p> <p>14 A. I finished my fellowship in</p> <p>15 1995.</p> <p>16 Q. Had you ever heard of Dr. Saed</p> <p>17 before your discussion with Margaret</p> <p>18 Thompson?</p> <p>19 A. I had not. He's a Ph.D., so</p> <p>20 it's not necessarily that I would know who he</p> <p>21 was.</p> <p>22 Q. Well, you've been an academic</p> <p>23 gynecologic oncologist for decades, right?</p> <p>24 A. Yes.</p>

Page 482	Page 484
<p>1 Q. You have never once heard of</p> <p>2 Dr. Saed, correct?</p> <p>3 A. I had not.</p> <p>4 MR. KLATT: That's all the</p> <p>5 questions I have.</p> <p>6 MS. O'DELL: I just have one</p> <p>7 question.</p> <p>8 FURTHER EXAMINATION</p> <p>9 BY MS. O'DELL:</p> <p>10 Q. Dr. Wolf, are your opinions in</p> <p>11 this case contained in your report and in the</p> <p>12 deposition you've given here today?</p> <p>13 A. Yes.</p> <p>14 MS. O'DELL: That's all I have.</p> <p>15 MS. BROWN: Just one final</p> <p>16 question to that.</p> <p>17 FURTHER EXAMINATION</p> <p>18 BY MS. BROWN:</p> <p>19 Q. One final question, Doctor.</p> <p>20 You're not relying on any materials to form</p> <p>21 your opinion that are not contained in your</p> <p>22 report or were discussed or marked as</p> <p>23 exhibits here today, correct?</p> <p>24 A. My report, no, and my</p>	<p>1 record.</p> <p>2 THE VIDEOGRAPHER: This</p> <p>3 concludes the deposition of Dr. Judy</p> <p>4 Wolf. Going off the record. The time</p> <p>5 is 7:03 p.m.</p> <p>6 (Deposition concluded at</p> <p>7 7:03 p.m.)</p> <p>8 -----</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>
Page 483	Page 485
<p>1 references, everything that's here today.</p> <p>2 Nothing else.</p> <p>3 Q. And for a housekeeping item,</p> <p>4 are all of the binders on that table to your</p> <p>5 left, are those documents on Exhibit B of</p> <p>6 your report?</p> <p>7 A. Yes.</p> <p>8 Q. Nothing additional, right?</p> <p>9 A. Nothing additional.</p> <p>10 Q. And all of the binders on the</p> <p>11 table are the references in your report?</p> <p>12 A. The references and the</p> <p>13 additional information that we provided</p> <p>14 today.</p> <p>15 Q. Okay. So with that, I don't</p> <p>16 think it's necessary, unless anyone</p> <p>17 disagrees, to mark all of the binders.</p> <p>18 MS. BROWN: And I have no</p> <p>19 further questions. Thanks.</p> <p>20 MR. KLATT: As long as the</p> <p>21 binders don't contain any highlighting</p> <p>22 or notations.</p> <p>23 THE WITNESS: Nothing.</p> <p>24 MS. BROWN: We're off the</p>	<p>1 CERTIFICATE</p> <p>2</p> <p>3 I, MICHEAL A. JOHNSON, Registered</p> <p>4 Diplomate Reporter and Certified Realtime</p> <p>5 Reporter, do hereby certify that prior to the</p> <p>6 commencement of the examination, JUDITH K.</p> <p>7 WOLF, M.D. was duly sworn by me to testify to</p> <p>8 the truth, the whole truth and nothing but</p> <p>9 the truth.</p> <p>10 I DO FURTHER CERTIFY that the</p> <p>11 foregoing is a verbatim transcript of the</p> <p>12 testimony as taken stenographically by and</p> <p>13 before me at the time, place and on the date</p> <p>14 hereinbefore set forth, to the best of my</p> <p>15 ability.</p> <p>16</p> <p>17 I DO FURTHER CERTIFY that I am</p> <p>18 neither a relative nor employee nor attorney</p> <p>19 nor counsel of any of the parties to this</p> <p>20 action, and that I am neither a relative nor</p> <p>21 employee of such attorney or counsel, and</p> <p>22 that I am not financially interested in the</p> <p>23 action.</p> <p>24</p> <p>17 MICHEAL A. JOHNSON,</p> <p>18 NCRA Registered Diplomate Reporter</p> <p>19 NCRA Certified Realtime Reporter</p> <p>20 Certified LiveNote Reporter</p> <p>21 Dated: January 8, 2019</p> <p>22</p> <p>23</p> <p>24</p>

<p style="text-align: right;">Page 486</p> <p>1                   ACKNOWLEDGMENT OF DEPONENT</p> <p>2</p> <p>3</p> <p>4                   I, _____, do</p> <p>5 hereby certify that I have read the foregoing</p> <p>6 pages and that the same is a correct</p> <p>7 transcription of the answers given by me to</p> <p>8 the questions therein propounded, except for</p> <p>9 the corrections or changes in form or</p> <p>10 substance, if any, noted in the attached</p> <p>11 Errata Sheet.</p> <p>12</p> <p>13 _____ DATE</p> <p>14 JUDITH K. WOLF, M.D.</p> <p>15</p> <p>16 Subscribed and sworn to before me this</p> <p>17 _____ day of _____, 20 ____.</p> <p>18 My commission expires: _____</p> <p>19 Notary Public</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>	<p style="text-align: right;">Page 488</p> <p>1                   -----</p> <p>2                   LAWYER'S NOTES</p> <p>3                   -----</p> <p>4                   PAGE   LINE</p> <p>5                   _____</p> <p>6                   _____</p> <p>7                   _____</p> <p>8                   _____</p> <p>9                   _____</p> <p>10                  _____</p> <p>11                  _____</p> <p>12                  _____</p> <p>13                  _____</p> <p>14                  _____</p> <p>15                  _____</p> <p>16                  _____</p> <p>17                  _____</p> <p>18                  _____</p> <p>19                  _____</p> <p>20                  _____</p> <p>21                  _____</p> <p>22                  _____</p> <p>23                  _____</p> <p>24                  _____</p>
<p style="text-align: right;">Page 487</p> <p>1                   -----</p> <p>2                   ERRATA</p> <p>3                   -----</p> <p>4                   PAGE   LINE   CHANGE/REASON</p> <p>5                   _____</p> <p>6                   _____</p> <p>7                   _____</p> <p>8                   _____</p> <p>9                   _____</p> <p>10                  _____</p> <p>11                  _____</p> <p>12                  _____</p> <p>13                  _____</p> <p>14                  _____</p> <p>15                  _____</p> <p>16                  _____</p> <p>17                  _____</p> <p>18                  _____</p> <p>19                  _____</p> <p>20                  _____</p> <p>21                  _____</p> <p>22                  _____</p> <p>23                  _____</p> <p>24                  _____</p>	

<b>A</b>	311:6 402:9	<b>addition</b> 171:13	316:1,24	45:5 155:4
<b>aaces</b> 7:20	418:7	178:24 181:12	318:13,17	279:13 282:19
<b>abdomen</b>	<b>accounts</b> 462:20	235:12,19	320:21	342:17 389:8
440:15	<b>accuracy</b> 173:17	<b>additional</b> 40:3	<b>advise</b> 348:3	471:3 477:19
<b>abdominal</b>	<b>accurate</b> 262:14	54:4 82:1 90:4	<b>advisory</b> 363:2,4	478:6,22
22:12 408:4	371:11	223:3 244:13	<b>advocacy</b> 365:1	479:12
411:3,23	<b>accurately</b>	287:8,9,23	<b>advocate</b> 55:10	<b>agree</b> 21:12 22:2
<b>ability</b> 30:10	263:11	288:13 359:1,2	63:9	38:14 116:4
228:18 300:14	<b>acknowledged</b>	483:8,9,13	<b>affect</b> 148:11,12	156:3 158:17
485:9	254:15	<b>additionally</b>	148:18 207:17	187:14 188:13
<b>able</b> 24:4 56:22	<b>acknowledgm...</b>	236:4	<b>african</b> 7:19	189:15,21
57:10 88:6	5:16 486:1	<b>additive</b> 71:7	<b>africanameric...</b>	202:19 214:11
132:12 202:4	<b>acog</b> 360:13,17	166:4,14 167:3	234:19 235:1	217:12 220:7
203:16 266:1	360:23 361:5	167:5	292:10,15,24	220:13 221:23
289:13 327:17	361:10,19	<b>additivity</b> 167:7	293:8,20	224:2 232:10
<b>abnormalities</b>	362:3 364:19	<b>addon</b> 257:10	294:21 296:1	233:12 237:15
339:23,24	365:6,20 366:3	<b>address</b> 302:11	296:12,23	243:12 245:10
343:2,3,6	<b>acquired</b> 136:5	364:13 447:8	297:8,18,22	254:5,12,13
344:1	315:16 320:20	454:4 455:8,17	298:1,18	265:6,14
<b>abnormality</b>	<b>acted</b> 394:24	<b>addressed</b> 392:5	301:13,16	266:14 287:14
339:22	<b>actinolite</b>	<b>addressing</b>	302:1,23 303:2	287:21 296:23
<b>absolutely</b> 17:4	117:11,13,13	393:8,18	<b>africanameric...</b>	305:10 311:13
37:6 84:17	118:9	<b>adequate</b> 273:13	8:10 293:15,17	315:14,19,20
85:7 120:17	<b>action</b> 303:7	273:24 276:14	295:2,10 296:8	316:16 318:10
230:15 330:13	304:2 485:12	396:16,23	296:15 328:3	319:5 320:24
<b>absorbed</b> 457:2	485:13	397:3,3,11	<b>afternoon</b>	328:21 329:11
<b>abstract</b> 36:10	<b>active</b> 49:10,13	<b>adequately</b>	388:17,18	331:1 332:15
219:16	49:16 363:14	204:6	<b>age</b> 315:18	335:14 344:10
<b>abstracts</b> 235:3	365:24	<b>adhesion</b> 411:7	316:7 318:18	350:10,16
235:15	<b>activities</b> 436:14	411:8	319:5 320:22	353:14 364:7
<b>academic</b>	436:18	<b>adhesions</b> 23:14	321:4,15 322:9	368:21 383:16
444:22 481:22	<b>actual</b> 95:10	25:7 27:2	322:11 323:10	385:6 436:10
<b>accept</b> 396:23	221:1 371:9	407:17,23	323:19 356:5	439:21 462:6
<b>accepted</b> 36:11	<b>acute</b> 21:1,5	408:9,12 409:1	<b>aged</b> 321:21	<b>agreed</b> 132:23
193:12 221:7	189:22 217:17	409:4 411:13	<b>agencies</b> 480:18	<b>agrees</b> 281:9
221:11,19	217:19,23	411:16,22	<b>agency</b> 30:9	<b>ahead</b> 11:2
222:11 223:5	218:10,13	412:9 413:12	32:5 223:11	89:14 460:15
235:14 391:9	305:21 407:3	454:13	224:5 227:18	<b>aimed</b> 354:20
392:3 397:10	408:17 409:2	<b>adjusted</b> 310:22	473:16	<b>air</b> 476:3,3,5,7,9
473:5	411:17 454:14	<b>administration</b>	<b>agent</b> 179:19,19	476:13,15,18
<b>access</b> 73:6,15	454:16	122:1 126:16	283:24	476:21,23
73:22 91:20	<b>add</b> 459:10	<b>administrations</b>	<b>agents</b> 283:13	477:13
155:22	<b>added</b> 71:7 72:9	124:20 234:9	403:14	<b>al</b> 7:10 8:6,13
<b>accommodate</b>	278:13 406:14	<b>admittedly</b>	<b>ages</b> 321:6,7	<b>alabama</b> 2:5
11:9	451:4 458:24	132:12	322:24	<b>alexis</b> 3:2,3
<b>account</b> 196:18	<b>adding</b> 321:20	<b>adulthood</b>	<b>ago</b> 10:2,14	225:18
	392:23,23	315:16,21	11:22 31:19,21	<b>ali</b> 42:14 358:15

<b>allegedly</b> 209:21 214:13	268:10 270:1 291:7 293:14	178:7 184:12 202:10 203:1,4	<b>anymore</b> 58:3,7 185:11	316:24 479:14 479:17
<b>allen</b> 2:2 39:16 40:2,5 41:21 42:6 43:14 395:22,24 396:2,9	303:5 305:8 306:4 312:17 317:11 333:8 333:20 372:15 384:11,13 419:14	203:14 208:10 208:15 231:3 231:19 233:8 245:13 247:3 255:22 256:9 257:12 262:4 267:8,19 268:1	<b>anytime</b> 329:2 <b>anyway</b> 21:23 41:15 139:5 423:24	<b>april</b> 7:14 234:1 <b>archived</b> 135:13 <b>area</b> 29:6,11 63:13 107:14 133:9 199:8 212:22,23 233:17 274:5 274:11 380:6 441:2,22,24 442:3 443:1 452:6 453:12 476:16
<b>allison</b> 2:18,19	<b>analyze</b> 202:9 302:21 304:13	268:2,22 269:8 269:9,10,12 270:5 289:2 296:14 298:15 299:11,13,14 300:14,24 301:4,6,9,10 323:22 326:2,3 326:15 327:13 334:10 343:20 346:7 368:2 403:24 439:18 469:2	<b>appear</b> 40:4 81:5 329:18 377:7 450:10 <b>appearances</b> 5:3 <b>appears</b> 37:2 52:21 68:16 100:20 103:13 113:15 328:4 459:4	<b>areas</b> 379:21 389:3 476:3,16 <b>arent</b> 105:11 397:17
<b>allowed</b> 289:2 <b>allows</b> 84:21 <b>ally</b> 9:16 <b>amendment</b> 31:11	<b>analyzed</b> 304:16 <b>analyzing</b> 152:4 312:7	<b>answered</b> 20:12 26:18 27:13 60:19 76:9 78:8 80:22 81:18 110:6 111:21 134:7 150:24 163:18 165:9 179:15 179:17 184:2 268:21 271:10 295:20 298:5 298:14 299:8 301:2 312:22 313:15 342:1 480:24	<b>appel</b> 4:2 <b>apples</b> 162:7 <b>application</b> 14:21 188:20 189:2 190:6,9 192:18 197:4 208:9 332:16 332:20 381:6 385:4	<b>arizona</b> 48:14 48:18,19 49:11 478:22 479:7 <b>arrive</b> 228:1 <b>arsenic</b> 6:19 8:19
<b>america</b> 3:14,18 388:20 471:24 <b>american</b> 7:16 7:19	<b>anderson</b> 48:11 48:12,13,16,17 48:18 156:2 444:21	<b>animals</b> 175:19 178:9,14,22 180:5 184:5 193:10 410:2,8 410:12,17 411:2	<b>applications</b> 108:17 332:4,4 <b>applied</b> 189:6 193:22 194:4 232:5 336:12 346:10 441:11 441:15 443:9 443:11	<b>article</b> 7:17 12:17 31:22 33:14 34:3,11 54:13 90:15,22 91:3,10 142:2 142:9 143:12 143:19 146:24 198:16,18 203:7 207:18 213:22 217:5 234:17 253:9 262:13 278:11 278:11 294:17 312:10 328:10 350:23 351:3,7 351:21 354:1,4 354:16,20,24 374:7 385:23 389:10,24 390:16,17 391:7,9,13 392:17,23 393:3,9 397:10
<b>amount</b> 107:8 108:18 110:2,8 110:17 131:14 151:14,14,14 151:20,23 161:14 166:5,8 181:2,7,9,20 183:11,18,21 190:16,23 191:1 219:8 220:23 254:24 257:2 295:16 295:17 325:13 327:8,24 332:24 335:15 335:18,22,23 335:24 336:11 336:23 337:3,4 374:20 375:20 375:21 386:7 386:17 464:15 464:20 476:20	<b>anecdotal</b> 412:5 <b>animal</b> 14:14 106:8 179:12 182:1 192:16 268:15 409:21 410:7,11,18,21 411:1	<b>answering</b> 60:13 460:23 <b>answers</b> 10:18 24:5,16 486:5 <b>anticipate</b> 210:13 <b>anybody</b> 96:14 405:4 <b>anybodys</b> 172:10	<b>apply</b> 15:14 107:7 441:11 441:11 <b>appreciate</b> 84:7 389:6 <b>approach</b> 13:18 278:3 <b>approached</b> 67:1 <b>appropriate</b> 99:20 149:18 300:17 386:21 452:1 <b>approximately</b> 94:15 315:17	
<b>amounts</b> 169:6 347:16 377:5 409:7	<b>anna</b> 8:13 <b>annual</b> 297:23 <b>answer</b> 11:2 15:2 24:13 26:5,23 32:1 38:24 39:3,5 58:16 61:17 77:1,16 83:18 85:14 86:6,9 86:15,16,23,24 88:24 89:3,8 89:10 106:1 115:13 120:22 123:10 138:1,2 144:4 147:24 149:16 156:18 161:17 163:9			
<b>analysis</b> 202:3 239:3 247:8 248:3 258:18 258:19 261:18 261:19 264:2				



398:8 447:4 <b>articles</b> 13:13 17:23 27:21 34:1 43:6 69:8 70:16,17 98:10 104:4,11,15 108:14 141:18 157:11,22 214:6 278:7,10 278:22 279:6 279:23 351:14 351:18 357:10 374:5 446:24 462:2,8 <b>asbestiform</b> 115:16 455:3 <b>asbestos</b> 58:2 110:20 111:2 111:12,14,19 111:24 112:18 115:5 116:24 117:4,6,9,18 118:1,15,22,23 118:23 119:3,5 121:7 122:12 123:15 124:12 124:23 125:7 125:21 126:7 127:1,7 128:6 128:23 129:3 130:13,24 131:2,4,13,18 133:11,16 134:5,9,18 138:20 139:16 141:1,6 142:10 142:21 144:1 144:16,22 145:8,17 146:6 146:18 147:9 147:16,21 148:14 149:1,5 149:13 150:4,9 150:10,14,17 150:20 151:3 151:20,24 152:7,16	153:14,19,24 154:4,9,15,17 154:22 155:1,7 155:16,19 156:5,23 157:24 158:3,8 159:3,7 160:14 160:16,23 161:9,14,15,21 161:21 162:5,8 162:11,12,17 162:19 163:1,5 163:16 164:1,4 164:9,14 165:4 165:5,14,14,22 166:5,8,13,18 168:5,9,12,14 168:16,22 169:3,7,15,23 170:5,6 171:2 171:13 179:1 181:7 182:13 182:16,20 280:18 338:20 339:6,12,18 341:20 342:4 342:19 343:14 343:23 344:12 344:22 345:7 346:21 347:16 347:23 372:9 374:3,9,13,14 374:19,24 375:21 377:15 378:15,23 380:1 400:3,16 401:6 404:4 410:12,22 411:2 417:9,13 417:20,21 418:6,9 421:13 421:14,20 422:8,17,22 423:4,8,13 424:11 425:21 426:2,6,10 427:10 428:6	428:13,14,22 429:2 430:16 431:5,20 438:9 448:5,13,17 449:3 451:18 452:2 455:14 455:18 456:12 456:17 457:15 457:19,23 458:4,21 459:8 459:8,9 463:19 464:2,5,15,20 465:2,2,11 466:9 467:10 471:21,22 475:19 476:4,8 476:18,21,23 <b>asbestosrelated</b> 339:7 344:15 345:9 <b>ascend</b> 191:14 <b>ashkenazi</b> 356:8 <b>asian</b> 379:23 <b>aside</b> 71:6 231:4 296:19 451:16 <b>asked</b> 14:10 20:12 24:3 26:18 27:13 43:4 45:5,19 60:19 61:10,18 64:14,18,22 65:4 70:9 76:8 78:8 80:22 81:18 83:4,6 84:2,16,18,19 85:13 86:21 101:13 109:9 110:5 111:21 120:18 132:18 134:7 150:23 163:18 165:9 179:15 231:20 233:6 268:20 271:10 289:8 289:12 291:9 291:13,22 298:5,14 299:7	299:8 300:6 309:8 310:8 313:15 317:7 318:9 322:9,20 322:24 342:1 342:17,24 358:14,14 389:9 449:15 451:17,21 452:10 454:12 454:19 456:11 457:22 461:24 463:10 469:8 479:22 480:21 480:23 481:9 <b>asking</b> 11:4 26:12 27:7,16 29:2 45:11 52:6,10 55:23 61:8 80:24 81:11 86:18 87:12 89:5 96:23 97:4 108:5,6 116:10 130:17 136:1 145:4 157:10 162:20,21 168:14 191:18 205:23 250:14 251:8 262:16 262:17,18 266:23 267:24 269:13 271:11 271:12 296:19 301:17 313:3,8 340:20 342:3,4 344:5 348:17 349:9 353:12 362:9 390:12 407:8 412:4,7 424:17 <b>asks</b> 34:14 401:20 <b>assess</b> 405:6 <b>assessed</b> 111:6 458:11 <b>assessment</b> 90:7	90:20 92:15 281:16 364:7 <b>assist</b> 24:5,10 <b>assistant</b> 53:11 348:7,9 <b>associated</b> 176:18 182:8 343:3 368:5 400:7 438:5 456:7 <b>association</b> 7:4 7:16,18 62:24 159:3 233:16 239:24 243:10 253:22 258:22 274:17 275:4 276:6 277:8 367:23 368:4 368:13,15,18 368:19 426:1 428:21 429:22 430:8,19 <b>associations</b> 271:3 311:6 369:9 <b>assume</b> 11:3 94:8 148:3 191:22 202:15 263:16 336:16 379:8,24 463:14 <b>assumed</b> 145:18 284:16 315:23 316:4 336:11 455:22 <b>assumes</b> 366:7 420:18 <b>assuming</b> 117:3 117:4 144:9 145:12,23 175:19 319:22 332:11 386:18 390:24 395:18 396:20 397:10 <b>assumption</b> 110:19 146:2 146:11,21
---	--	---	---	--

147:5,18 148:10 152:6 152:14 366:9 377:13 395:10 <b>assure</b> 312:4 <b>astm</b> 419:5,15 419:20 420:6 <b>atlanta</b> 46:9,11 47:7 49:4 <b>atomic</b> 326:7 <b>attached</b> 37:22 53:5 486:7 <b>attempted</b> 107:11,24 108:10 150:1,7 161:19 162:1 162:15 168:19 189:4 191:13 218:19 219:3 302:11 328:10 334:7 373:2,5 375:1 <b>attempts</b> 162:23 <b>attention</b> 157:4 224:19 225:1 225:21 250:11 253:8 258:1 274:24 305:13 305:22 311:14 313:13 361:23 <b>attorney</b> 12:1 42:15 43:14,17 485:11,12 <b>attorneys</b> 14:9 42:6 69:22 70:1,6 72:18 81:20 97:14 395:18 <b>austin</b> 1:14,15 3:13 44:2 <b>author</b> 16:20 90:15 199:19 199:23,24 200:15 220:21 220:22 304:12 386:4 394:24 <b>authored</b> 93:10	390:17 462:3,8 <b>authoring</b> 351:13 <b>authoritative</b> 229:19 <b>authority</b> 30:4,8 32:7 100:14 229:1 270:21 271:8 280:12 281:8 <b>authoritys</b> 270:15 <b>authors</b> 250:12 253:13 263:11 307:13 308:8 310:18 311:9 395:2 450:11 <b>available</b> 14:2 80:3 84:23,24 91:3,8 104:11 224:4 234:12 235:3,5 236:12 243:14 244:4 265:13 281:14 281:20 329:20 <b>avenue</b> 3:3,12 3:17,21 <b>average</b> 316:7 370:5 371:13 <b>aware</b> 28:5 29:21 34:24 43:6 45:9 46:22 56:19 57:20,22 58:18 67:22 81:19 110:9 115:24 116:22 117:19 121:24 122:5 122:10 123:12 123:18,21 124:9,15 129:18,22 162:14,22 163:8,14 165:4 165:10 167:19 167:24 168:17 192:8,12	222:14 226:2 245:19 246:8 247:11 280:11 280:16 281:8 291:14 326:5 328:9 336:5,8 349:23 361:2,8 384:12 388:21 405:4 407:15 407:21 408:2 411:4 412:12 412:15 414:1,2 416:14,17 417:12,17,19 418:4,14 422:4 422:14 423:2,6 432:8,15 433:6 433:11,13,17 433:20 434:11 434:16,18,22 435:2,5,6,23 436:6,23 437:6 438:8,10 440:24 442:23 471:12 472:15 473:14,21 474:13,16,21 475:4 <hr/> <b>B</b> <hr/> <b>b</b> 4:2 69:14,18 69:20 70:3,6 70:13,22 71:1 71:12,19 72:11 77:8 78:4 79:4 79:5,12 81:5 81:15 320:18 483:5 <b>b12</b> 433:21 <b>baby</b> 123:22 124:2,11,20,22 125:20 127:1,7 128:1,5,22 129:2,19 130:2 130:13,23 131:1,3,9,14 131:18 133:15	134:5,8,12,17 134:22 136:18 142:15,19,20 143:6 144:2,8 145:7 146:5 147:19 150:3,8 150:15,21 151:9 165:23 170:6,24 171:16 174:24 175:13 176:2 180:8 182:14 182:16,19 183:6 372:2,17 373:3,10,17,24 375:7,23 377:7 420:15 447:17 448:5 458:6 464:6,16,20 465:3,4,9 468:14 474:1 <b>back</b> 38:2 89:21 89:24 94:7 98:2 120:16,20 139:11 155:8 162:2 165:12 169:20 181:6 195:13 208:11 212:7 213:8,15 219:2 225:13 225:16 253:1 263:3,14 279:21 281:22 315:10 324:20 332:9 378:8 388:13 392:8 393:7 403:2 418:22 430:6 440:12 444:5 445:21 452:9 461:20 <b>background</b> 43:2 419:4,19 420:7 <b>backside</b> 334:6 <b>bad</b> 343:11 377:11 422:13	<b>balance</b> 227:8 <b>banned</b> 29:18 407:18 <b>banner</b> 48:13,13 444:21 <b>based</b> 76:10 108:22 124:10 159:5 191:23 195:12 201:4 201:17 202:15 202:20 203:20 212:8 217:12 229:7 253:23 259:20 281:18 285:20 301:24 303:23 318:5 318:10 327:9 327:14 338:1 347:17 377:13 385:23 400:11 423:12,14 426:3 428:13 428:23 430:17 455:24 <b>baseline</b> 298:24 <b>basically</b> 203:15 <b>basis</b> 34:6 75:7 75:11,14 76:3 76:6 77:23 78:5,10,13 87:1 88:21 93:9 125:19 126:5 127:6 181:22 190:22 <b>bathroom</b> 195:17 436:16 <b>beach</b> 2:10 <b>beans</b> 435:3 <b>bear</b> 370:22 389:5 <b>bears</b> 113:13 <b>beasley</b> 2:2 39:16 40:1,5 41:21 42:6 43:14 395:22 395:23 396:2,9 <b>beasleyallen</b> 2:3
---	--	--	--	---

2:4 <b>becoming</b> 43:10 60:10 <b>began</b> 31:7 49:23 303:7 311:24 316:22 318:11 349:22 349:24 <b>beginning</b> 1:15 139:11 253:1 269:20 311:15 378:8 <b>begins</b> 9:2 100:6 101:8 227:1 273:12 317:20 <b>begun</b> 323:1 <b>behalf</b> 395:6 <b>beings</b> 175:14 178:2,3,10 <b>belief</b> 147:14 191:23 348:15 359:22 382:7 <b>believe</b> 13:6 25:14 28:8 46:12 49:3 50:8 53:6 56:15 58:7,17 59:1,14 95:16 111:11 112:16 119:18 125:2 127:6 131:1,18 134:8,11 136:12 143:16 147:4,5 148:12 151:19,23 153:13,23 154:4,17 158:12 161:7 162:4 163:4 165:17,23 173:11 176:5,8 179:16 182:13 184:2 192:1 194:21 198:1 221:6 223:4 227:17 228:6,7 228:14 235:7	254:15 255:10 261:6 278:8 281:17 282:17 285:15,19 293:1 297:18 312:11 322:23 338:12 339:5 339:11,17,18 340:7 342:3 352:8 359:16 361:9 363:19 366:2 369:3 371:14,24 372:2,6 373:11 375:22 379:16 379:19 380:8 380:19,21 381:2,4,7,9 385:2,11 387:22 389:8 395:20 413:21 421:3,16 422:21 429:7 455:2 465:9 469:19 474:10 <b>believed</b> 155:6 <b>believes</b> 283:13 <b>berating</b> 300:16 <b>berge</b> 8:6 247:7 247:12,14,20 248:2,11 249:1 249:5,17,24 250:9,16 251:2 251:16 252:11 253:6 257:14 258:2 262:2 264:2,7,17,21 265:7,11 283:10 <b>berges</b> 257:15 259:12 261:11 <b>best</b> 8:17 30:8 32:16 243:2 255:7 300:14 340:10 341:4 341:10,23 354:3 365:2	447:3 479:16 485:9 <b>beyond</b> 126:22 134:22 <b>bias</b> 99:21 103:14 254:2,9 254:14 255:9 255:12 284:22 302:12 304:3 305:11,17 306:5,6 310:24 311:5,10,15 312:5,12,19,24 313:18,18 314:1 329:4 <b>biddle</b> 3:6 <b>big</b> 255:3 <b>bigger</b> 113:11 <b>biggest</b> 153:9 <b>bike</b> 195:18 436:16 <b>billed</b> 41:21 219:19 <b>binder</b> 68:14,24 113:3 <b>binders</b> 69:4,13 71:21 483:4,10 483:17,21 <b>biologic</b> 367:24 <b>biostatistician</b> 256:1 <b>birth</b> 56:2 65:7 <b>bit</b> 10:14 24:22 25:22 26:12 44:19 344:8,8 348:12 480:1 <b>black</b> 7:13 <b>blair</b> 6:16 98:21 98:23 99:1,6 99:10 100:13 100:17,20 <b>blocked</b> 195:2 <b>blogged</b> 462:18 <b>blood</b> 2:13 192:9 432:23 433:2,7 434:12,14 435:16,18	457:3 <b>blount</b> 141:3,5 142:23 <b>blounts</b> 141:15 141:17 142:8 374:6 <b>blueprint</b> 391:15 <b>board</b> 278:20 279:4 363:2,3 363:4 <b>body</b> 7:18 15:14 15:15 18:13 23:15 32:15 56:21 189:8 190:10 196:16 205:20 211:8 215:1 220:15 243:13 244:10 253:23 254:7 278:8 279:22 281:21 311:6 319:4 320:22 335:23 399:14 399:22 400:1 400:18,24 401:14,24 405:3,11 407:16 409:8 409:13 415:16 416:6,16 420:24 433:4,8 434:4,13,15 435:17 436:12 437:2,18 438:17 439:24 440:2 471:5 477:7 <b>bodyonly</b> 204:18 205:5 <b>bodyuseonly</b> 206:7,11 <b>bold</b> 99:15 <b>bomb</b> 326:7 <b>bombs</b> 326:22 <b>borderline</b> 241:2	<b>bottle</b> 151:9 170:15,24 171:11 183:6 372:19 374:24 452:16 453:1 <b>bottles</b> 136:19 171:2,13 191:6 191:7 <b>bottom</b> 332:10 394:20 <b>bounds</b> 84:9 <b>boys</b> 316:12 <b>bradford</b> 286:1 286:7,13,17,24 287:4,5 288:16 333:13,18,22 366:17,23 367:4 368:16 <b>brain</b> 169:5 <b>brcl</b> 337:12 <b>break</b> 11:8 65:21 85:7 88:16 89:14 139:5,15 203:12 210:11 211:5,16 213:7 241:20 253:5 281:7 315:5 378:12 <b>breaks</b> 11:6 <b>breast</b> 337:18 355:21,24,24 356:4 <b>breath</b> 185:19 475:1,8,11,12 476:5 <b>breathe</b> 474:17 474:24 476:22 <b>breathed</b> 432:6 <b>breathing</b> 342:19 344:2 <b>briefly</b> 13:22 <b>brings</b> 27:23 <b>broad</b> 450:16 <b>broader</b> 278:9 <b>broadway</b> 2:14 <b>brought</b> 58:1
--	--	---	---	--

68:2,5,7 394:5 <b>brown</b> 2:13,18 2:19 5:7,10,13 9:13,16 11:17 12:10 13:14 17:10 18:11,21 19:7 20:16 22:1,15,24 23:10 24:1,14 26:10 27:3,19 29:3,15 30:12 30:22 31:14 33:6 35:9,15 36:14,20 37:19 38:24 39:13,14 39:23 40:9,17 40:22 41:2,5 41:12,18 44:3 44:17,18 50:17 52:12,17 53:1 54:1 55:15 57:12 58:8 59:6 60:12 61:3 62:18 63:7 64:6 65:12,20 66:8 66:10,15,23 67:8 68:11 73:9,17 74:1,8 74:22 75:16 76:14 77:6,21 78:12 79:8 80:5,8,16 81:1 81:12,22 82:9 82:12,17,21,23 83:19,22 84:2 84:17 85:5 86:7,20 87:20 87:24 88:5,14 89:11,13,16,23 92:3,6,16 93:1 93:2 94:6 95:3 95:12,17 97:2 98:3,20 101:4 101:21 102:6,8 102:17 103:3 103:10 104:1,7	104:16 105:16 107:9,20 108:7 109:1,12,20 110:15 111:10 112:1,11 113:8 115:7 116:1,11 117:7 118:10 119:1,14 120:1 120:17,21 121:4,17 122:8 122:15,18 123:1,5,8,20 124:8,17 125:8 125:16 126:4 126:12 127:4 127:11 128:11 128:17 129:6 129:11 130:9 130:20 131:20 132:3,10,19,20 133:12 134:10 135:1,16 136:3 136:16 137:4,8 137:17 138:8 138:18 139:3 139:13 140:13 140:20 141:13 142:5 143:18 144:13 145:5 146:1 147:17 148:8 149:2,22 150:12 151:6 151:18 152:2 153:12 154:12 156:12,20 157:3,12,18,23 158:23 159:11 159:22 160:7 161:6 162:13 163:13 164:5 165:1,20 166:11 167:15 168:10 169:10 170:11 171:4 172:8 173:8,23 174:12 175:10 175:22 177:1	177:23 178:11 179:3,9 180:2 180:20 181:21 182:11 183:3 183:19 184:13 186:13 187:1 187:13,21 189:3,14 190:7 191:9,20 193:14 195:21 196:5,15 197:5 197:18 198:8 198:23 200:13 201:12 202:1 202:18 203:8 203:18 204:11 204:22 205:9 205:18 206:17 207:23 208:20 210:4,10,14,18 211:2,3,14 212:3 213:7,19 214:4,5,22 215:9,23 216:10,20 217:4 218:18 219:18 221:4 222:5,13 223:1 224:1,12,17,20 224:22 225:6 225:11,14,18 225:19 226:17 228:20 229:23 230:15,21 231:5,8,12,16 231:23 232:17 233:9,20 236:7 237:4,22 238:19 239:1,5 239:10,13 240:7,10,14 242:15,21 243:3 244:1,9 244:18 245:4 245:16 246:3,5 247:6 248:1,16 249:21 252:1,9	252:17 253:3 253:20 255:13 260:6,16,18 261:9,22 264:13,22 266:10 267:11 268:7,17 269:3 269:11,15,17 270:11 271:5 271:16 272:4 273:5 274:23 275:13,18,24 276:1,12 277:4 279:10 280:19 281:6 282:2 283:3 284:19 285:11,22 286:20 287:20 288:18 289:5 290:7,19 292:1 294:5,10,15 296:3,9 297:5 298:6 299:1,10 299:16,18,22 300:1,18 301:5 301:18 302:6 302:16 303:11 303:18 304:8 305:19 306:2 306:15 307:12 307:19 308:7 308:18 309:4 309:16 310:17 313:6,22 314:18 315:2,5 315:12 316:6 317:9 318:7 319:2,11,20,24 320:9,15 322:12,21 323:7,16 324:1 325:5,22 327:1 327:5 328:8,20 329:5 330:2,23 331:19 332:14 333:11,19 334:19 335:3	335:13 336:3 336:19 337:5 338:17 339:14 340:19 341:1 341:17 342:7 342:16 343:10 344:6,19 345:15 346:17 348:1 349:6,7 349:17 350:18 350:22 353:10 353:22 357:8 363:7 364:1,16 365:4,22 366:14 367:1 367:12,18 368:11 369:5 369:18 370:15 372:13,20,23 373:1 374:22 376:14 377:3 377:10,20 378:10 380:16 382:4,18 383:1 384:1,22 385:19 386:22 387:13 388:3 389:9 425:7 426:13,21 427:17 448:6 449:6 450:20 452:3,19 453:2 453:10 454:1 455:19 456:20 458:8,23 459:17 460:1,7 460:14,18,21 461:1,12,14,23 463:6,9 464:3 464:11,23 465:18 466:6 466:17 467:3 469:7 470:1,16 482:15,18 483:18,24 <b>browns</b> 399:12 <b>building</b> 42:15
--	--	--	---	---

42:18	25:13 26:1,9	181:18 182:6	296:24 297:14	399:15,24
<b>bulk</b> 133:15	26:16 27:11,18	183:12,23	297:21,24	400:8,13,18,24
223:18	28:7,24 30:1	184:5,8 185:11	298:10,12,17	401:13,23
<b>bullets</b> 355:14	32:6,16 42:23	188:7,15	298:19 299:5	404:21 405:2,7
355:15	43:5,7 44:13	189:18 190:5	301:14,16	406:19,21
<b>burden</b> 7:9	45:7,14 47:18	195:5,24	302:2,5 303:1	407:6,11,13,14
<b>bursa</b> 409:22	48:3,4,7 54:14	196:10 197:3	303:1 304:4,20	407:24 410:3,8
<b>buzzards</b> 220:16	54:18,23 55:7	203:22 204:4	309:10,22,24	410:13,16,19
<b>byline</b> 351:8	55:18,21 56:3	205:4 208:15	310:8 311:7	411:3,9,15
	56:4,6,8,16,23	208:24 209:15	316:13 317:21	412:1,10,19
<b>C</b>	57:1,6,16,24	212:10 217:15	317:23 324:23	413:13 420:23
<b>c</b> 2:1 3:1 4:1,4	58:10,22,24	217:19 219:9	325:8,13,20	421:8,9,15,18
320:6,8	59:3,9,16,17	220:6,9,19	326:1,9,9,11	421:20 422:2,5
<b>calcagnie</b> 2:8	61:6,12,16,23	222:7 224:5	326:15,17	422:18,23
<b>calculated</b> 109:2	62:4 63:1,18	226:5 229:2,5	327:9,21,22	423:5,10,14
256:12	63:22 64:10,13	229:15 232:23	328:5,13	426:2 428:13
<b>calculation</b>	64:16,20,23	233:17,24	331:14 336:22	428:22,22
256:4 257:14	65:7 67:3,13	234:21,23	337:11,13,14	429:10 430:4
257:16 259:13	76:7 106:6,20	235:1 237:7,19	337:18,18	430:11,17,21
261:11	107:23 108:10	238:7 241:7,9	338:4,19	437:3,20 438:6
<b>calculations</b>	108:11 109:4	243:10 244:3	339:20 340:2	438:19 439:1
452:23	109:23 110:4	244:11 245:9	342:6,15 343:2	439:14 445:2,6
<b>california</b> 2:10	110:18 126:23	248:20 251:21	343:5,7,22	445:7,9,11
2:15	138:16 153:1	253:15,23	346:11,21,23	447:4 449:11
<b>call</b> 263:20	153:11,15,22	254:8,21 257:9	347:19,24	454:17 456:5,8
398:5 478:15	154:1,7,18,21	259:3 264:10	348:5,16	456:10 457:16
478:18 479:21	155:7,13,16	265:17 266:17	350:11,24	458:2,7 462:3
481:4,7	156:5,23 158:4	267:5,15 268:5	351:23 352:9	462:10,14,21
<b>called</b> 9:9 46:2	158:9 159:4,20	270:13,19,22	353:18 354:3	463:1 464:16
351:14 360:13	160:2,15,18,23	271:2,7,13,17	354:21 355:1,7	464:22 465:5
416:19 449:11	163:16,23	271:19,22	355:13,21,24	465:17,22
481:11	164:10,21,23	272:9,20,21	356:1,4,5,13	466:3,20 467:2
<b>calling</b> 286:18	165:6,19 166:7	273:1,6,8,11	357:3,12	467:7,9,11,19
<b>canada</b> 90:7,21	166:10,16,19	273:14,22	359:15,18,23	467:23 469:1
281:16	166:22,24	274:4,14,17	360:24 361:5,7	472:4,23 473:3
<b>canadian</b> 90:20	167:1,12,19	275:1,5 276:4	361:13 362:5	473:6 480:18
<b>canal</b> 442:2,18	168:13,23	276:7,14 277:5	362:20 363:1	<b>cancers</b> 21:22
<b>cancer</b> 7:5,17,19	169:8,12,17	277:9,23 278:4	363:11,18,21	21:22 133:9
7:19,22 8:5,8	171:7,17	278:6 279:1,19	364:20 365:16	160:19,19,20
8:11,15,18	174:15,20	280:2,13,21	366:5 368:6	160:20 223:11
14:1,22,24	175:2,6 176:4	281:2,10,19	372:3 375:24	238:14 240:22
15:7 17:8 18:4	176:9,16,20	282:17 284:11	376:4,6,12,19	267:6 347:9
18:14 19:12,19	177:6,11,19	289:3 290:18	376:24 380:9	406:21
19:23 20:1,8	178:16 179:6	290:23 291:4	381:16 382:16	<b>cant</b> 11:23 22:9
20:15,19 21:13	179:12,19,20	292:9,21	387:16 389:11	47:3 70:7
21:18,20 22:6	179:22 180:1,9	294:23 295:3	389:14,19	72:24 77:17
23:4,9,15 25:3	180:15,16	295:17 296:16	395:6 397:15	94:5 129:21

169:9 178:7	404:19 431:24	259:8 275:6	298:9 325:8	189:21 220:24
191:5 198:5	432:2 434:6,6	277:16 287:9	339:13 343:9	280:13,21
203:6 247:3	434:8 458:13	287:23 288:4,9	343:22 346:11	281:10 284:11
266:2 284:23	458:14 459:3	289:8,11,15,19	372:7 376:3,5	297:14 336:22
318:4,5 323:23	<b>carcinogenicity</b>	290:21 291:6,8	376:18 381:15	339:18 346:21
330:17 332:23	168:3 182:10	291:16 302:3	385:4 399:23	348:5,16
347:7 352:11	205:2 206:12	302:24 304:13	400:13 402:15	350:12 351:23
365:20 375:12	283:21 432:4	311:16 327:7	402:16 403:3	352:9 357:3,12
399:3,10 402:1	<b>carcinogens</b>	327:10 370:11	404:12 405:6	359:14,23
402:11 412:18	387:17 457:20	387:23	406:18 407:2,6	362:5,20
415:13 420:13	<b>carcinoma</b>	<b>cases</b> 1:6 216:18	407:10,12,16	363:20 372:3
423:22 432:7	238:5	216:23 217:3	407:24 408:9	375:23 376:6
432:14 469:5	<b>care</b> 4:5 12:22	259:2 308:24	409:17 411:3,6	380:9,20
473:1 474:7,7	42:22 59:15	357:20 395:7	411:8,13,15	381:22 384:5
<b>capable</b> 115:15	131:9 149:6	<b>casper</b> 17:9,17	412:10,18	385:14 400:17
116:23 401:12	186:1 187:4	17:22 18:9	413:13 420:22	400:24 407:24
401:22 402:2	<b>career</b> 408:5	19:5	421:9,17,20	410:18 421:7
405:1 445:9	462:7,13,18	<b>category</b> 283:23	422:2 438:24	421:15 437:20
<b>carbon</b> 7:13	<b>case</b> 1:4 10:3,6,9	417:1,2	439:14 445:11	454:17 462:14
192:6	29:17 43:9	<b>causal</b> 92:15	456:2,5,7,9	462:21 463:1
<b>carcinogen</b>	45:21 56:14,19	159:2 233:16	457:16 459:2	465:5 466:3
458:21	57:20 95:2	426:1 428:21	464:16 465:17	467:1 469:1
<b>carcinogenesis</b>	96:16,24 106:1	<b>causation</b>	465:21 466:19	<b>causing</b> 22:18
25:6 154:6	107:11 108:9	107:17 235:4	467:6,9,10,19	23:14 212:9
206:13 220:18	111:18 152:5	268:15 287:12	467:23	214:14 219:14
385:5 400:2	157:7 158:2	290:2	<b>caused</b> 22:3 23:4	339:7 342:20
<b>carcinogenic</b> 6:9	170:13 191:23	<b>causative</b>	28:7 154:21	401:9,12,23
6:21 7:12 8:21	196:18 203:17	237:18 271:4	155:7 178:2	402:12 405:2
31:10 127:3	207:4 208:1	<b>cause</b> 14:1,22,24	179:12 310:24	406:24 445:10
150:17 153:21	216:12,18	15:7 21:13,18	344:12 410:8	458:1,7 464:22
154:10 164:14	225:24 234:16	25:7 26:7,16	410:12 416:19	<b>caveats</b> 267:3,7
164:15,16,17	268:9,19 270:2	27:10 61:12	<b>causes</b> 20:2 23:8	268:3 290:16
164:18 168:6,7	271:23 303:4	62:3 106:6	27:18 55:20	<b>cavities</b> 411:3
168:8,9 170:8	303:13 359:5	109:3,22	56:15,23 57:5	<b>cavity</b> 19:18
170:9 171:9,10	360:22 367:9	153:14,21	57:16 58:10,21	22:12 230:3
221:3 280:18	370:18 388:20	154:18 156:5	61:23 64:9	457:6
280:18 281:3,5	450:19 464:13	167:12 168:13	67:3 76:6	<b>cdc</b> 366:3
282:1 283:13	468:6 471:15	171:6,17	106:20 107:22	<b>cell</b> 215:1
283:24 284:18	473:23,23	174:24 177:10	108:9,11	219:13 241:2
284:21 285:14	482:11	178:21 181:24	110:18 153:24	241:11,18
286:23 340:12	<b>casecontrol</b> 7:6	182:5 183:12	154:6 158:3,8	242:9 381:21
372:8 373:7	199:1 235:6,20	183:16,22	160:23 163:16	381:24 382:2
376:5 377:2	236:17 247:24	184:4,10	164:10,21	382:16,17
385:5,16 401:5	249:18 250:5,8	188:15 189:17	166:22,24	479:24
401:7 402:8,8	253:16 254:1,6	208:24 209:15	168:23 178:15	<b>cells</b> 189:6 221:2
403:8,8,12,16	254:14,16	213:2 217:14	182:6 184:6	380:23 381:8
404:4,5,6,8,9	255:6 258:23	220:6,9,19	188:2 189:16	382:15 385:15



385:15 406:23 <b>certain</b> 66:1,5 107:1,8 175:24 250:21 284:5 398:16 417:12 464:14 473:18 476:17,20 <b>certainly</b> 18:19 21:12 28:16 82:24 83:11 88:16 121:23 128:23 132:23 160:15 188:1 191:6 260:24 343:8,24 353:1 443:5 451:7 <b>certainty</b> 400:12 <b>certificate</b> 5:15 485:1 <b>certified</b> 1:18 485:3,18,18 <b>certify</b> 485:4,7 485:10 486:4 <b>cervical</b> 166:24 167:1 193:6 <b>cervix</b> 193:5 441:3,6 442:3 442:6,18 456:24 <b>cetera</b> 451:11 <b>cgarber</b> 2:9 <b>challenge</b> 472:22 <b>challenges</b> 255:2 333:6 <b>challenging</b> 29:12,14 255:1 333:4 334:10 <b>chance</b> 103:8 202:13 284:22 369:24 <b>chances</b> 171:12 <b>chandler</b> 17:9 17:17 <b>change</b> 30:11 98:2 134:3 148:15 172:1	252:17 311:18 311:18 375:3 378:2 380:23 382:2 409:3 461:8 487:3 <b>changed</b> 72:9 237:17 379:17 <b>changes</b> 19:15 19:17 219:17 221:1,2 280:6 381:21,21,23 382:13,14 393:9 406:24 407:2 409:23 456:7 486:6 <b>changing</b> 172:4 <b>chapters</b> 63:21 <b>charge</b> 358:15 <b>charged</b> 358:5 <b>chart</b> 113:16 114:12,18 116:3,19 117:8 117:24 119:16 121:8 155:6,9 155:10,11,11 383:13,18 <b>charts</b> 263:6 383:21 416:13 <b>check</b> 92:24 122:1 174:1 386:19 <b>checking</b> 122:6 <b>chemical</b> 170:14 185:17 186:11 <b>chemicals</b> 174:23 175:12 175:24 177:7 181:24 290:3 <b>chest</b> 206:4 339:22,24 343:3,6 440:16 <b>children</b> 387:1,7 <b>china</b> 379:15,24 <b>chocolate</b> 435:4 <b>choose</b> 267:19 360:15 <b>chose</b> 251:23	252:7 264:11 264:24 <b>chromium</b> 111:3 164:16 168:7 372:10 400:5,16 404:7 431:24 432:8 432:22 433:1,3 433:7 <b>chromiums</b> 432:17 <b>chronic</b> 20:24 21:4,4,9 22:13 23:3 217:19,23 217:24 218:5,5 218:10,14,21 380:9 381:16 381:20 406:22 407:4,5,8,10 407:12,13 408:24 456:6,8 <b>circumstance</b> 337:22 <b>circumstances</b> 50:23 <b>cite</b> 22:16 23:1,7 25:18 27:16 193:16 224:3 230:7 283:8 469:13 <b>cited</b> 20:5 72:3 74:18 95:10 101:19 140:1 283:2 382:19 414:3 420:12 449:24 <b>cites</b> 143:1 320:23 383:3 468:9 <b>citizens</b> 228:22 229:11 232:1 329:12 <b>city</b> 474:17 <b>clarification</b> 52:6 <b>clarify</b> 178:20 308:15	<b>clarifying</b> 172:13 <b>class</b> 303:7 304:2 <b>classification</b> 227:14 283:12 <b>classified</b> 276:4 <b>clear</b> 29:4 39:11 40:21 85:12 152:8 216:11 241:18 322:18 324:21 326:22 349:8 377:4 380:7 444:10 <b>clearly</b> 159:4 426:3 428:23 <b>cleveland</b> 3:22 <b>client</b> 471:12 <b>clinical</b> 28:13 46:3,5,7,22 47:13 360:12 <b>clinician</b> 33:15 <b>clinicians</b> 360:15 <b>close</b> 67:17 244:12 247:9 354:8 356:3 369:10,15,21 <b>coalition</b> 233:24 363:2,11,19 364:4,20 365:17 <b>coauthors</b> 35:17 480:8 <b>cobalt</b> 111:4 164:17 372:10 400:5,16 404:8 431:24 433:20 434:2,7,12 <b>cofactors</b> 200:12 200:14 <b>cohort</b> 99:18 101:13 103:16 159:5 197:16 236:23 237:10 238:3,11 240:20 242:4	242:13 243:5,8 247:14,21 248:12 249:4 249:10,15 255:3,15 256:22 258:18 258:23,24 259:5,9,14 261:14,20 265:11,14,21 266:4,13,22 275:6 277:17 282:4,11 287:11 288:24 289:20 293:11 383:10,22 423:14 426:4 428:24 <b>cohorts</b> 242:10 247:24 248:11 249:19 261:12 261:24 262:7 265:9,11,16 266:22 268:9 268:19 270:2 324:12 370:17 <b>colleague</b> 43:8 385:21 388:5 <b>colleagues</b> 185:23 362:1 362:24 371:2 <b>colon</b> 337:14 <b>colorado</b> 130:2 <b>column</b> 159:1 253:12 258:5 310:21 425:24 429:8 <b>com</b> 2:3,4,9,14 2:19 3:3,7,12 3:16,21 4:3 351:15 <b>combination</b> 164:20 165:17 166:9,21,22 169:15 376:17 404:19 <b>combined</b>
--	--	---	---	--

250:13,23	84:20 85:18	177:21 184:10	353:4	17:21,24 18:5
251:5	<b>communicatio...</b>	290:4 343:22	<b>concerns</b> 16:15	18:14 19:13,16
<b>combining</b>	86:3	379:17 465:9	17:7 20:6	20:9 25:9,19
261:2	<b>community</b>	<b>composition</b>	45:13 67:12,14	196:8 197:8
<b>come</b> 51:7 59:15	46:16 51:20	170:14 371:23	362:9 376:13	<b>conducted</b>
104:10 206:23	52:2,7,15	452:24 454:7	384:13,14,21	123:13 303:5
212:7 213:8	116:13 133:14	<b>comprehensive</b>	384:23 400:2,8	<b>confer</b> 473:11
253:15 283:5	193:12 194:8	427:7	400:10 437:24	<b>conference</b>
326:8 327:7	194:22 195:8,9	<b>comprise</b> 74:13	459:1	54:21 462:24
358:13 361:20	221:8,12,20	<b>comprised</b>	<b>concert</b> 33:10	<b>conferences</b>
361:21 365:8	222:4,12	259:2	<b>conclude</b> 18:15	63:17
411:19 477:6	228:15 348:3	<b>concentrate</b>	310:18 457:14	<b>confidence</b>
<b>comes</b> 15:13	<b>company</b> 25:18	138:19	<b>concluded</b>	263:12,20
17:16 126:7	46:2 51:3,5,8	<b>concentrations</b>	159:12 227:9	284:24 369:9
270:22 274:13	51:12 53:10	476:4	275:2 280:12	369:21 370:2
<b>coming</b> 105:6	73:4,12,16	<b>concept</b> 203:19	280:20 307:14	<b>confident</b>
124:21 195:6	77:7 79:10,17	250:17	313:23 384:16	369:15
379:20 441:1	88:20 147:13	<b>concern</b> 17:21	457:18 484:6	<b>confirm</b> 71:5
<b>commencement</b>	352:14 388:22	20:24 21:9	<b>concludes</b>	263:16 323:6
485:4	416:1,1 446:6	23:9,13 25:5	233:14 306:23	328:19
<b>comment</b> 34:15	<b>compare</b> 190:22	25:13 26:6	316:23 331:8	<b>confirmation</b>
429:17	191:6 223:7	27:1 28:9	484:3	288:14
<b>commentary</b>	251:7	60:11 61:1	<b>concluding</b>	<b>confirmed</b> 119:4
132:16 149:16	<b>compared</b>	84:7 126:21	341:18 346:20	<b>conflict</b> 394:20
172:4	313:19 346:23	131:11 148:22	<b>conclusion</b>	396:17,21
<b>comments</b> 392:4	367:23 392:12	151:15 153:9	18:13 27:23	<b>conflicts</b> 395:3
392:12,19	<b>comparing</b>	153:10,17	106:19 148:7	<b>confounded</b>
393:2,7,9,12	261:17	155:17 167:5	159:17 160:13	312:5
393:17,18,19	<b>compiled</b> 81:16	175:9 181:18	160:22 214:23	<b>confounders</b>
416:3	81:20	181:19 182:23	223:11 227:21	200:16
<b>commerce</b> 2:4	<b>complete</b> 101:8	196:3 254:13	228:1 285:20	<b>confounding</b>
<b>commercial</b>	246:24 427:10	281:1 311:16	306:16 307:22	204:9 284:22
136:13,13,14	<b>completed</b> 96:9	369:7 370:1	308:9 314:11	<b>confused</b> 62:16
<b>commission</b>	96:11	373:7 406:22	320:18 322:14	130:16
486:17	<b>completing</b>	459:10	323:23 340:16	<b>confusing</b> 52:11
<b>committed</b>	359:4	<b>concerned</b> 20:3	340:21 341:3	58:17
121:2	<b>complications</b>	60:24 165:16	347:2 365:9	<b>confusion</b>
<b>committee</b> 2:6	408:13	177:4,22	385:7 431:1	393:24
2:11,16 280:6	<b>component</b>	180:17 183:2	<b>conclusions</b>	<b>congress</b> 3:12
361:21	165:15 458:4	183:18 246:22	32:19 102:16	<b>conjunction</b>
<b>common</b> 187:11	461:6 467:21	255:11 354:21	106:12 188:14	40:14 176:21
238:6	<b>components</b>	369:20 370:6,7	314:14	364:12
<b>commonsense</b>	127:2 152:22	407:3 464:21	<b>conclusive</b>	<b>connecting</b> 27:6
295:14	153:3 154:5	<b>concerning</b>	233:15	<b>connection</b>
<b>communicated</b>	162:11 166:9	162:10 176:23	<b>condom</b> 195:23	25:18 29:17
477:24 480:16	169:22 173:15	178:23 179:1	<b>condoms</b> 16:11	30:14 61:16,19
<b>communication</b>	173:18 176:22	179:21 217:18	16:24 17:8,15	130:11 138:10

193:15 225:23 257:19 340:3 349:11,20 358:7 359:11 372:15 386:8 <b>consider</b> 13:2 30:3,7,13,16 30:21 32:4 70:20 74:17 105:2 124:18 127:20 130:1,3 130:10,18 197:23 205:10 207:10 211:17 221:13 256:21 257:13 259:12 261:10 265:12 266:12 268:13 270:20 271:6 271:21,24 272:19,24 282:3 303:4,13 308:8 311:9,20 314:2 317:10 323:8,18 324:3 329:3 341:3,21 360:22 367:14 367:22 368:12 368:14 396:23 458:20 473:18 <b>consideration</b> 126:20 127:17 <b>considered</b> 16:9 32:18,22 70:19 87:17 128:4 130:18 138:14 159:24 187:16 197:10 199:14 204:16 223:4 227:20 278:19 280:17 281:2 301:20 305:7 315:3 322:19 340:21 342:8 345:17 347:18 365:5 369:6 397:11 414:5	420:7 450:18 451:8,13 467:10 469:14 470:4,10 <b>considering</b> 8:12 32:11 197:6 223:10 355:8 455:3,12 <b>considers</b> 226:3 <b>consistency</b> 255:8 288:15 288:20 289:21 367:24 370:17 <b>consistent</b> 66:7 240:16 241:23 289:16 290:5,6 290:22 368:15 368:18 370:5,9 <b>constituents</b> 166:14 <b>consult</b> 104:18 104:20,23 <b>consultant</b> 395:1 <b>consultants</b> 478:1 <b>consulting</b> 396:6 <b>consumed</b> 422:6 422:15 <b>consumer</b> 144:10,15 145:9,10 146:8 148:2 <b>contact</b> 156:11 <b>contacted</b> 362:2 362:18 <b>contain</b> 15:17,22 16:3 17:1 58:2 69:5,13 145:16 147:16 150:9 171:13 378:13 483:21 <b>contained</b> 66:18 68:3,24 69:14 71:12,18 95:5 98:5 99:10 104:9 114:10	114:11,21 118:12 138:10 142:8 147:20 151:3 152:7,16 352:20 375:6 378:19 383:12 385:24 432:17 438:9 446:14 469:14 482:11 482:21 <b>containing</b> 16:7 455:3,14 <b>contains</b> 101:12 130:24 131:2,4 134:9,18 139:16 142:21 149:1,5 150:10 162:5,5 184:9 374:9 405:8 466:24 468:8 <b>contaminate</b> 373:24 <b>contaminated</b> 110:20 111:19 112:18 121:7 124:22 125:21 128:6 134:5 141:1,6,21 142:10 143:6 143:20 144:1 145:8 149:13 150:4 153:14 163:4 339:6,12 339:17 341:20 342:18 343:14 344:22 345:6 346:15 373:17 375:11 <b>contaminating</b> 150:14,20 165:23 374:14 <b>contamination</b> 115:6 151:8 284:17 418:8 449:3 <b>contemporane...</b> 40:13	<b>contents</b> 77:9 <b>context</b> 74:17 156:6,14 158:19 161:1 161:10 163:2 165:7 189:16 305:21 372:22 456:18 <b>continue</b> 48:23 202:24 <b>continued</b> 126:21 332:1 <b>contribute</b> 406:18 <b>contributing</b> 68:10 69:2,10 69:23 75:22 76:22 158:13 158:13 400:17 414:22 <b>contributors</b> 395:24 <b>control</b> 56:2 65:7 306:6,9 306:10 432:22 433:2 <b>controlled</b> 28:13 200:16 306:5 <b>controls</b> 268:10 268:19 270:2 308:23 370:18 <b>controversial</b> 430:12,22 <b>conversation</b> 44:4,20,23 45:3,4,19 219:24 478:8 <b>conversations</b> 82:20 83:10,16 <b>conveyed</b> 37:16 <b>conveying</b> 38:23 <b>convinced</b> 56:21 57:5 60:10 62:3 357:14 <b>convincing</b> 382:12 <b>copies</b> 71:18	<b>copy</b> 12:14 31:15 37:7 53:2,5 71:15 71:22 91:4 100:14 120:24 157:8 214:3 224:21 238:20 239:6 240:11 303:20 394:14 424:5 426:15 426:17 427:7 <b>corn</b> 407:15,23 <b>corporate</b> 2:9 <b>correct</b> 28:19 31:4 36:1,7 38:7 48:16 49:14 50:2 51:23 53:16,19 53:21 55:11 57:16 58:12 60:17 61:7 62:1 63:14 64:10 67:3,9 69:16 90:8,16 90:17 93:17 94:11 96:7 97:7 98:8,24 99:3 101:15 106:21 109:15 112:20 116:20 116:24 120:5 122:2 125:11 127:18 131:14 132:14 147:21 152:12 156:14 158:19 160:2 161:1 167:13 182:20 183:7 184:20 185:3,4 186:20 193:19 193:24 194:6 194:12 199:20 203:24 205:5 214:9 216:14 225:12 226:5 226:10 227:15 229:16 230:4,5
--	---	--	--	--

230:9 232:9,12	402:15 403:3	<b>cosmetic</b> 7:8	462:7,13,18	438:16
234:1 235:10	403:16 405:14	119:9,20	474:18	<b>current</b> 134:12
240:18 242:1	405:23 406:5	140:16 161:10	<b>court</b> 1:1 9:6	265:22 348:2
243:6,7,10,11	408:6,10,11,13	162:17 163:3	10:17,20 461:2	359:11
249:1,5 250:6	408:16,21	164:9 340:6	<b>cover</b> 47:12	<b>currently</b> 449:1
250:23 253:16	409:8 410:23	341:6,19	451:7	<b>curriculum</b> 6:13
256:1 260:10	413:13 414:1,7	343:17 345:18	<b>covered</b> 47:7	<b>cut</b> 105:8
260:22,23	414:20,24	345:23 416:21	49:3 463:4	<b>cv</b> 52:21 68:9
261:3 263:5,7	416:6 417:10	417:2 448:14	<b>covering</b> 46:4	69:1 425:11
264:23 265:9	417:22 420:16	449:1 468:10	49:7	444:9,14
266:6 267:24	421:21 422:8	<b>coughlin</b> 3:15	<b>cramer</b> 197:20	<b>cycle</b> 433:24
271:19,20	422:18 423:15	<b>coughlinduffy</b>	198:10 199:7	434:3
273:8,14,17	425:21 426:7	3:16	200:20 202:2	<b>cynthia</b> 2:8
274:2,3,11,18	428:9,10,15,19	<b>couldnt</b> 29:13	207:4,7 234:17	<b>cytokine</b> 381:23
276:7,11,24	430:22 431:5,9	51:14 95:18	235:9 329:21	
277:1,23	431:21,22	194:23 206:15	330:4,9 331:7	<b>D</b>
280:21 283:14	432:6 433:14	208:16 307:14	<b>cramers</b> 197:23	<b>d</b> 1:13 4:4,6 5:1
283:16,17,22	434:19 436:3	<b>counsel</b> 2:6,11	198:16 200:8	5:6 6:1 7:1 8:1
284:1,5,12,24	439:5,15,24	2:16,21 3:5,9	207:10,24	9:8 481:19
285:1,8,15	440:5,9,19,20	3:14,18,23 4:5	<b>created</b> 114:18	485:5 486:12
286:24 288:5	440:22 441:3,8	31:6 35:10	140:4 304:3	<b>d662000</b> 419:5
288:10 289:21	441:12,13,16	36:16 82:20	<b>credit</b> 363:9	419:20
290:9 292:11	441:22 442:3,4	83:1,10,17	<b>criteria</b> 286:1,3	<b>daily</b> 190:18
292:12,16,17	442:6,9,10,13	85:18 86:3	286:7,10,13,17	206:14
302:13 305:14	442:20 443:10	87:13,16 88:8	286:18,24	<b>damage</b> 219:13
310:4 311:2	443:13 444:14	88:18 89:6	288:17 333:13	219:15 380:20
312:1 316:14	445:10 453:9	90:2,14,23	<b>critical</b> 300:11	<b>dangerous</b>
316:20 317:3	459:24 462:10	92:3 93:8,13	<b>critique</b> 248:2,8	151:16 152:1
321:4,19,22	462:15,21	95:12 120:23	248:15 293:11	401:3,3
324:9,10	463:2,15	132:21 157:9	317:22 324:11	<b>data</b> 36:11 39:10
331:14,22,23	465:12 468:10	157:15 224:21	324:17 371:10	39:11 45:10
332:17 333:22	468:11 470:11	231:20 239:5	<b>crocidolite</b>	58:3,22 75:22
334:22 344:15	471:5,24 472:1	299:16 300:18	118:8	132:2,7 142:22
345:3 349:12	473:12,20	392:5 426:14	<b>cross</b> 369:16	182:15 225:3
350:5 352:5	474:11 475:1	447:20 448:1	442:5,24 443:3	226:13 233:14
354:12,18,21	475:12 476:19	449:4 462:1	450:17 457:2	236:10,11,15
355:14,21	477:1,4,7,22	463:17 485:11	<b>crowley</b> 111:6	244:3 246:24
356:9,14,18	482:2,23 486:5	485:12	172:6 174:2	247:4 249:4,14
357:13 358:12	<b>corrections</b>	<b>counselor</b> 269:6	179:13	252:3 261:2
364:4,7 374:9	486:6	<b>country</b> 48:8	<b>crowleys</b> 171:21	262:12 265:13
377:16,22	<b>correctly</b> 24:12	<b>couple</b> 41:6	172:14,16,20	266:13 268:16
381:17 388:22	<b>correlated</b> 21:19	239:11 470:18	173:1,4,10,17	278:12,14,15
388:23 389:14	<b>correlation</b>	480:14	174:14 176:1	281:14,15
391:8,11,19	264:9 265:4	<b>course</b> 46:21	376:8	290:1,2 311:4
392:20,24	439:11	73:2 225:23	<b>culture</b> 380:23	314:5 319:1
396:11,14	<b>corresponding</b>	230:6 238:12	<b>cure</b> 45:15	324:3,4 326:4
398:17 399:9	394:23	371:9 386:5	<b>curiosity</b> 437:16	326:6,21,22

327:7,10 333:3 334:15 336:4,9 347:17 349:23 361:11 365:8 365:15,18 366:11,24 367:21 368:2,5 382:12 387:14 392:23 395:21 401:15 414:22 423:6 451:10 451:13,14 457:9 476:11 <b>date</b> 1:16 9:4 35:21 44:8 53:19 61:21 62:2 65:13 66:17,22 90:13 94:19 200:3 252:16 309:8 310:22 314:21 415:22 485:8 486:12 <b>dated</b> 36:3 52:22 53:6,15 93:10 94:21 95:6 96:17 351:7 485:19 <b>day</b> 11:7 42:24 49:21 170:22 170:23 479:6 486:16 <b>days</b> 11:22 31:21 173:3 185:16 <b>dbr</b> 3:7 <b>dead</b> 192:6 <b>dealing</b> 425:20 <b>deals</b> 355:18 <b>dealt</b> 54:21 383:3 449:16 <b>debra</b> 7:9 <b>decades</b> 188:6 195:1 321:18 481:23 <b>december</b> 279:13 281:16	354:16 356:12 357:1 <b>decided</b> 114:6 360:9 <b>deciding</b> 60:22 <b>decision</b> 30:10 30:11 269:2 285:8 472:14 <b>decisions</b> 73:5 <b>declared</b> 395:2 <b>decrease</b> 330:10 <b>decreased</b> 202:21 203:22 331:2 332:5 <b>deeming</b> 199:15 <b>defer</b> 115:12,17 451:24 452:8 452:22 453:16 453:22 454:6 <b>define</b> 15:11 22:22 116:8 441:19 <b>defined</b> 170:22 <b>definitely</b> 192:16 390:10 426:17 438:1 470:14 <b>definition</b> 15:18 15:20,23 16:5 16:12 199:1 270:15 271:3 271:15 <b>degree</b> 89:1 400:12 <b>deliveries</b> 387:10 <b>demonstrated</b> 112:17 <b>denial</b> 329:12 <b>deny</b> 328:19 <b>deodorizing</b> 15:16 <b>dependent</b> 110:19 368:20 <b>depends</b> 211:21 211:22 <b>deponent</b> 5:16	486:1 <b>deposed</b> 9:21 <b>deposit</b> 454:8,9 <b>deposition</b> 1:12 6:1,5 7:1 8:1 9:3 10:13 11:13,14,15 12:7,8 31:7,12 35:13 36:18 40:15 52:23 66:13 67:19 95:15 100:22 112:21,23 113:6,17,19,22 113:24 114:3 114:22 118:13 121:9 128:15 128:19 139:22 141:2,4 142:23 157:1 172:7 198:21 213:17 213:21 224:15 233:1 238:22 245:1,2 247:16 269:20 272:2,6 294:13 350:20 353:20 354:1 373:12,15 374:10 415:10 418:24 427:22 482:12 484:3,6 <b>deposits</b> 22:10 453:21,22 <b>depth</b> 13:8 <b>dermal</b> 156:10 241:11 <b>describe</b> 12:15 13:21 105:22 105:24 <b>described</b> 13:18 177:5 290:13 334:16 467:16 <b>describes</b> 12:18 <b>describing</b> 218:22 <b>description</b> 6:3 7:3 8:3 12:24	<b>design</b> 250:22 258:19 <b>designed</b> 257:12 266:1 267:8 268:2 <b>despite</b> 282:17 283:7 <b>detail</b> 124:7 <b>details</b> 34:5 35:7 115:23 291:22 <b>detect</b> 237:12 259:6 262:1,7 317:23 <b>detected</b> 258:22 <b>detection</b> 350:12 351:24 <b>determination</b> 29:22 180:22 182:19 183:5 200:7 207:12 251:11 279:24 283:19 284:4 289:7 318:5 374:13,18 423:12 <b>determine</b> 218:16 223:17 304:1 367:11 <b>determined</b> 122:11 123:14 124:10 130:12 274:15 277:6 284:7,9 285:13 333:21 404:3,4 404:6,7,8 419:5,20 <b>determining</b> 263:10 367:10 <b>detroit</b> 480:2 <b>develop</b> 325:14 325:20 326:9 326:12 410:2 <b>developing</b> 327:21,22 <b>development</b> 19:23 21:19 174:19 175:7	176:19 180:15 327:9 328:13 430:4,11,21 <b>devoted</b> 52:1,9 52:14 <b>diagnosed</b> 154:20 304:4 304:20 310:7 <b>diagnosis</b> 8:15 351:1 352:16 <b>diagnostic</b> 46:2 <b>diagnostics</b> 48:22 <b>diagram</b> 457:5 <b>diametrically</b> 228:2,7 <b>dictate</b> 97:10 <b>dictated</b> 97:9 <b>didnt</b> 29:5 38:20 39:6 44:9 62:7 67:6 69:17 71:6 72:5 81:9 81:21 94:4 95:1,19 96:13 100:16 105:9 117:14 123:2 125:5 136:13 158:15 172:10 174:6 198:1,5 203:16 236:8 236:16 246:12 246:15 248:12 264:16,21 269:10 278:15 278:16 286:5 293:7,12 307:15 318:20 320:10 322:17 364:13,14 365:15 370:4 376:3 401:15 402:21 414:18 424:13 449:4 464:14 477:6 <b>diego</b> 2:15 <b>difference</b> 70:11 70:14 161:20
---	---	---	---	---



162:16,24	<b>direct</b> 101:6	358:2 378:12	55:2 59:20	361:10 364:18
168:3 189:5	157:4 198:14	<b>discussion</b> 82:13	66:11 67:18	<b>document</b> 1:6
198:2,3 237:12	225:20 226:18	87:11 202:11	69:18 92:4	11:18 16:23
248:14 253:5	226:24 239:2	242:19 246:17	97:5 99:15	17:5,18 18:1,1
297:15,20	240:1 253:7	258:9,12 262:3	101:6 102:1,9	18:23 19:4
304:19 305:1	258:1 302:17	472:9 480:21	102:13 103:5	25:18 38:6,9
308:16 311:18	303:19 320:17	481:17	103:15 104:2	39:16 41:20
313:21 314:8	<b>directed</b> 33:3	<b>discussions</b> 85:2	105:18 112:9	52:18 71:18
383:10	<b>directing</b> 224:19	87:13,15	112:12 113:4	74:12 76:5,11
<b>differences</b>	224:24 226:20	<b>disease</b> 188:22	117:9,16 119:8	78:11 79:21
295:6 328:5	274:24	254:20 255:7	123:10 132:12	113:3 136:24
337:15,19	<b>direction</b> 206:24	267:7 295:5	132:24 134:4	141:12,24
379:20	<b>directly</b> 20:1	344:11,15	135:10,19	144:5 202:17
<b>different</b> 25:22	406:11	<b>diseases</b> 186:19	149:24 154:14	203:5 208:6
26:12 33:1	<b>disagree</b> 88:12	339:8 345:9	160:9 182:12	216:2 233:5
37:1 38:13,18	234:3 277:22	<b>disk</b> 139:11	185:20 186:15	247:18 278:20
59:22 61:2	<b>disagrees</b>	253:1 378:8	187:15 198:14	279:12 393:12
87:14 96:2	483:17	<b>dispute</b> 323:6	201:14 202:19	447:19 471:1
116:4,15,20	<b>disclose</b> 50:9	354:11,15	202:23 203:9	<b>documentation</b>
146:21 173:15	386:2,6,15,17	<b>disputing</b>	203:20 204:12	257:4
181:14 200:11	389:12,17,23	354:13	210:16,19	<b>documented</b>
216:22 223:8	390:2,2,14	<b>dissolution</b>	211:6 224:3	155:5
229:10 241:6	391:2	51:12	225:16 226:19	<b>documents</b> 12:3
258:3 275:19	<b>disclosed</b> 391:2	<b>dissolved</b> 22:13	234:14 238:20	41:1 65:19
278:2 287:3,6	395:12 397:9	51:10	239:16 240:4	66:2,6 67:20
287:7 288:8	<b>disclosure</b>	<b>distinction</b>	241:4 245:6,14	69:14 71:12,14
289:8 307:8,11	389:20 395:4	160:9	251:10 254:6	72:16,20 73:4
307:18 311:8	396:17 397:11	<b>distinguish</b>	258:2 260:7	73:12,16 74:10
325:12,13	<b>disconnect</b>	234:7 235:7,23	270:13 272:11	74:13,15,18
333:13 337:9	61:14	279:18	278:19 292:19	75:2,6,19
337:11,20,22	<b>discount</b> 314:11	<b>distinguishing</b>	294:7,16	76:12,13,16,24
337:23 342:13	314:19	115:16 116:24	295:11 299:9	77:8 78:3,15
365:9 379:10	<b>discover</b> 86:5	<b>distracted</b>	300:13 301:19	78:19 79:10,19
379:20 380:12	<b>discoverable</b>	250:15	302:17 308:19	80:10,14,20
389:3 400:14	84:6,14 85:16	<b>district</b> 1:1,1	317:15 320:17	81:4,5,15,24
455:8	87:2,9,22	<b>dna</b> 219:15	325:6 326:16	82:2,6 83:6
<b>differentiate</b>	88:10	380:20 407:2	341:19 347:3	84:12 85:14
163:11	<b>discovery</b> 84:21	<b>docket</b> 1:7	350:10,23	86:11,23 87:6
<b>differently</b>	<b>discuss</b> 83:9	<b>doctor</b> 8:17	351:4 353:2,23	88:20 89:7
197:9 248:9	300:21	17:11 18:22	354:3 356:24	90:5 140:1
337:20	<b>discussed</b>	19:9 20:10,18	360:4 371:21	414:4,10,15,19
<b>difficult</b> 109:8	105:23 140:23	21:11 22:2	376:15 378:18	446:11,15
334:22 335:2,5	165:3 471:2	24:2,21 31:5	384:2 385:20	483:5
335:16 410:17	482:22	31:17 33:15,20	386:23 390:15	<b>doesn't</b> 19:18
<b>dioxide</b> 7:13	<b>discussing</b>	35:18 40:7	447:4 460:21	21:6,17 58:2,4
<b>diplomat</b> 1:17	139:15 213:23	41:7 47:11	473:6 482:19	77:24 131:5
485:3,17	253:5 294:18	52:18 54:12	<b>doctors</b> 47:8	136:9 148:18



150:16 151:2	95:13 97:12	286:12,16	464:1 466:4	121:9,10,19,20
151:12 165:11	99:12 103:1,8	289:1 292:23	467:14,16	122:2,7,11
166:19 168:4	103:12 104:23	294:1 298:20	468:2 471:15	123:19 126:15
169:23 170:4,6	105:2,5 107:5	301:15 304:24	475:15,20	127:13 128:18
170:7 171:3	108:18,20	305:3 306:20	478:12 479:4	129:10,12
210:20 217:9	109:24 110:7,8	313:7 317:6	481:6 483:15	131:22 132:6
221:23 230:6	114:1,19 115:3	318:4,16,24	483:21	135:3,6 136:4
231:3,16	115:10 118:21	319:14 320:4	<b>dosage</b> 327:17	136:18 137:6
240:24 246:12	124:6 128:2	322:6 323:3,14	367:10	137:10,11,16
267:1,9 269:9	131:9 132:23	324:22,24	<b>dose</b> 107:6	137:20 138:22
293:8,9 298:20	133:10,13	325:3,7 326:3	109:19,21	139:14,18,22
325:16 337:12	136:1,1 137:3	326:15,20	110:11,11,12	140:22 141:3,5
337:14,17	137:9 138:4	327:2 328:17	181:9,24 219:4	141:15,15,17
368:15,19	140:12,17	334:2 337:3	219:12 220:22	142:23 146:10
369:16 395:17	147:4 148:12	340:15 342:5	324:24 328:1	147:2 149:15
406:11 411:24	148:14 149:6	344:7,17	329:7,10,13,18	149:18 156:21
412:18 413:6	151:5 155:3,9	345:24 346:16	329:24 330:4	167:10 170:13
413:12 417:5	155:20,22	348:10 353:8	331:21 332:22	171:21 172:6,9
466:15 467:15	157:21 161:17	354:9,10,15	333:4,7,24	172:14,15,16
473:11	164:1 166:17	359:16 361:22	334:3,9,10	172:20 173:1,4
<b>doing</b> 20:22 46:3	167:2,4 173:7	364:6 365:12	335:1,5,6,10	173:10,17
46:6 47:10	174:5,7,8	365:18,23	367:5,8,11	174:2,14 176:1
50:19 83:14	179:17 181:8,9	366:2 371:19	<b>doses</b> 219:6	178:13 179:13
185:14 220:1	182:23,24,24	375:8 377:5	347:23	198:10,16
286:6 300:15	183:9,15,17	379:3,4 386:14	<b>dosing</b> 181:16	199:7,14 200:8
357:6 362:12	184:11,11	386:19 387:24	<b>dr</b> 9:3,14 11:11	200:20 202:2
365:2 395:16	185:16 188:22	389:22 390:3,8	18:16 26:21	207:4,7,10,15
458:18 478:10	190:1,1,13,18	393:16,18	27:6 35:17	207:24 213:20
479:23 481:5,9	190:21 191:12	396:6,19	36:22 37:15	216:6,12
<b>dont</b> 10:23 21:5	193:2 200:1	398:12 399:5,7	38:2 39:12	219:20 220:15
22:9 23:21	202:4,15,15	401:16 405:8	40:1 41:4,19	220:16,16,20
29:20 30:2	205:22 206:5	412:10,23	45:24 57:4	230:12 231:24
34:2,4,4 35:6,6	208:8 212:5,16	413:13,21	62:20 64:2	234:3 235:4,13
40:18 43:3,18	212:20 213:4	416:4,7,12	65:4 80:1,9	236:15 243:4
43:24 44:6,7	215:13 216:4	417:24 418:1,1	83:8,13,17	253:4 256:6
47:4,24 49:3	217:2 228:6,6	418:2,17,19,20	84:22 85:22,23	267:20 277:22
50:15,15 56:6	241:10,20	419:14 420:8	86:4 88:15	280:11 300:24
58:7 61:10	244:17 245:24	420:19 421:5	89:3,12,24	301:7,8 315:13
65:3,8 73:6,11	246:16 247:4	421:16 422:1	90:2 93:4	340:4 357:17
73:15,18,22	247:19,22	424:14,20,24	98:21,23 99:6	370:23 376:8
74:15 75:3,5	250:7 254:12	426:11 432:14	99:10 100:13	378:11 380:6
77:1,5 78:22	255:10 257:23	432:19,19,20	100:16,20	381:1,4 382:5
82:3 85:4 88:3	257:24 260:14	433:5 435:10	102:22 107:16	382:11 388:4
89:2,3,13	261:6 262:8	435:11 438:22	110:16 112:16	388:17 391:5
90:13 91:4,22	269:8 275:12	439:18 442:15	113:13,20	392:4 393:6
92:1 93:21,22	275:15 277:10	447:5,7,9	114:18 118:13	394:4,10,24
94:1,4,17,18	279:23 282:24	454:2 455:10	120:3,4,8,11	395:5,15

397:16 398:5	<b>dusted</b> 17:15	458:12 471:23	<b>endometrioid</b>	159:18,23
409:9 418:17	<b>dusting</b> 25:11,24	<b>electron</b> 133:19	241:2,15	164:1,8
423:19 425:10	26:6 27:10,17	133:23 419:13	<b>endometriosis</b>	<b>epi</b> 152:7,11,16
432:18 444:8	28:4,6 30:24	451:20	228:11 273:17	196:6,9 197:14
446:3 452:11	191:15	<b>electronically</b>	356:20 440:5	341:10 369:7
452:13,22,23	<b>dusts</b> 6:20 8:19	71:14	441:8	<b>epidemiologic</b>
453:16,16,18	<hr/>	<b>elements</b> 167:17	<b>endpoint</b> 302:20	45:10 56:20
453:19 454:6	<b>E</b>	174:14 177:10	302:21	268:14,24
454:24 455:11	<b>e</b> 2:1,1 3:1,1 4:1	178:1	<b>endpoints</b> 257:7	286:12 290:1
459:15,21	4:1,6,6	<b>elevation</b> 371:4	<b>enhance</b> 184:7	437:24 438:2
460:4 461:11	<b>earlier</b> 66:1 90:3	<b>eliminated</b>	<b>enrolled</b> 316:18	468:22 469:3
461:24 463:11	172:2 196:4	439:24 440:1	317:2 321:3,16	<b>epidemiological</b>
463:12,15,19	221:5 240:18	<b>ellen</b> 6:16 99:1	322:2	100:5,7 102:7
464:5,10 468:6	332:22 348:13	100:13,16	<b>enrollment</b>	260:5,9
470:23 472:20	367:21 380:3	<b>ellis</b> 3:20 17:9	321:18	<b>epidemiology</b>
475:20 478:5	385:22 388:21	17:16 19:2	<b>enter</b> 189:7	7:20 18:3 94:1
479:21 480:9	399:11 415:8	<b>elses</b> 15:15	<b>entire</b> 36:13	101:23 109:15
480:10,11,14	436:15 440:5	96:14	56:21 74:12	152:4,23 153:4
480:21 481:3	442:15 444:24	<b>elucidate</b> 295:5	98:18 100:10	153:8 188:10
481:16 482:2	465:1	<b>email</b> 37:21	103:9 113:21	196:17,24
482:10 484:3	<b>early</b> 67:22	478:2	126:5 211:22	197:7,9 203:21
<b>draft</b> 72:7 96:10	350:12 351:24	<b>employ</b> 13:17	212:2,18,21	204:17 205:3
97:23 172:24	379:23 382:20	126:13 234:7	213:5,5 233:7	205:11 219:3
<b>drafting</b> 70:19	451:1 473:3	286:24 312:3	255:11 268:23	232:21 254:8
<b>drafts</b> 96:13	<b>easier</b> 262:21	313:11	278:8 279:22	271:18,22
97:8,22	461:2	<b>employed</b> 80:19	442:1 462:13	272:21 285:3
<b>drain</b> 185:18,18	<b>east</b> 1:15	105:19,24	<b>entirely</b> 82:21	315:14,23
<b>drains</b> 186:12	<b>eastern</b> 1:1	137:19 228:1	<b>entirety</b> 232:20	322:14 328:22
<b>draw</b> 323:23	<b>ebay</b> 136:6,7,14	278:2 287:4,4	<b>entities</b> 2:21 3:5	329:7 338:2,10
<b>drew</b> 106:12	136:19 137:3	294:19 297:13	3:9	340:5 341:4
<b>dried</b> 435:3	137:12	299:3 446:7	<b>entitled</b> 38:4	342:9 345:17
<b>drinker</b> 3:6	<b>editor</b> 34:14	<b>employee</b>	82:11,19,24	366:5 467:24
<b>drinking</b> 421:14	<b>effect</b> 190:2	485:11,12	83:11,15 85:2	468:1,3,9,13
422:5,6,16	241:11 255:12	<b>employment</b>	85:5,8 86:4	469:13
<b>drive</b> 2:9	306:11,24	54:4	225:2 272:8	<b>epithelial</b> 238:6
<b>dropped</b> 326:7	307:21 308:10	<b>employs</b> 285:24	278:23 350:24	241:9,12 242:8
<b>drug</b> 121:24	314:20	367:4	354:2	303:1 311:7
124:19 126:16	<b>effective</b> 350:12	<b>enabled</b> 258:18	<b>entries</b> 72:12	339:20 342:15
234:8	351:24	<b>encounter</b> 155:2	79:13 140:14	380:23 382:15
<b>duces</b> 6:5	<b>effort</b> 251:3	<b>endeavored</b>	<b>entry</b> 41:24	382:17
<b>due</b> 305:22	312:18	15:2 304:1	70:24 71:3	<b>epithelium</b>
313:24 410:22	<b>effusion</b> 186:8	<b>endeavors</b> 32:15	121:10	430:3,10
<b>duffy</b> 3:15	<b>effusions</b> 185:12	<b>ended</b> 415:15	<b>environment</b>	<b>epstein</b> 7:15
<b>duly</b> 9:9 485:5	185:16	416:5 420:14	417:14 474:14	<b>equal</b> 270:1
<b>duration</b> 330:5	<b>either</b> 218:9,13	<b>endometrial</b>	474:22 475:5,8	<b>equaling</b> 307:2
330:7	239:9 278:15	48:4 440:7,11	477:10	<b>equally</b> 268:10
<b>dust</b> 17:24	396:3 446:23	440:18 441:1,5	<b>environmental</b>	268:19

<b>equipment</b> 417:22 418:9	244:3,10 251:1 264:1 311:11	270:10 273:2 273:13 274:1	455:1 461:22 470:20 482:8	11:12,15 12:7 12:8,16 13:19
<b>equivilate</b> 333:4	315:13,22	274:16 275:3	482:17 485:4	31:8,12 33:2,3
<b>errata</b> 5:17	322:13 324:2	276:6,11,15,20	<b>examined</b> 9:10	33:8 34:8 35:1
486:7 487:1	338:18 346:18	276:23 277:7	350:7	35:12,13,19
<b>errors</b> 98:1	383:22 405:13	278:3 279:17	<b>examining</b>	36:5,18 38:3
263:19,24	405:17	281:18,24	168:21	38:10,13,21
<b>especially</b>	<b>evaluation</b> 6:9	283:20 284:10	<b>example</b> 143:1	39:17 40:4
179:22	6:20 7:11 8:20	285:14 290:6	262:19 273:10	41:20 52:21,23
<b>esquire</b> 2:2,3,8	31:10 32:11	313:17 329:7	274:10 280:7	53:15,20 66:12
2:13,18 3:2,7	207:18 333:7	329:10,13	312:10 321:16	66:13,19 67:20
3:11,16,20 4:2	<b>event</b> 201:13	339:23 340:10	330:4,9 419:2	68:3 69:14,17
<b>essential</b> 432:9	<b>everybodys</b>	341:23 346:14	475:19	69:20 70:3,6
433:4,21 458:5	337:19	363:19 366:13	<b>exceeds</b> 433:9	70:13,22 71:1
<b>established</b>	<b>evidence</b> 14:3	366:16 370:8	434:14 435:17	71:12,18 72:11
159:4 165:22	22:17 23:2	374:19 378:23	<b>excel</b> 113:16	74:10,18 77:8
426:3 428:11	58:20 75:15	380:1 382:1,21	<b>excerpt</b> 6:19	78:4 79:4,5,12
428:23	77:3 100:6	383:4,13 385:2	428:7	81:5 96:17
<b>establishes</b>	111:13,23	385:17,18	<b>exclude</b> 222:6	97:5,17 98:6,7
337:7	115:5 125:4,7	402:7 408:1,24	<b>excluded</b> 246:9	98:14 100:21
<b>estimate</b> 47:22	126:3,14	412:8 418:2	249:3	100:22 113:13
97:20 150:1	137:20 138:9	420:18 421:5	<b>excludes</b> 252:2	114:2,7,10,21
452:15 479:16	138:15 143:5	433:6,14	<b>excuse</b> 23:19	118:12 119:12
<b>estimated</b> 256:8	145:14 146:17	434:11,19	77:14 82:7	120:15,20,24
371:14	147:14 155:12	435:15 436:3,7	85:21 102:19	128:15,19
<b>estimating</b>	160:11 177:15	437:13,23	122:14 132:5	129:5,7,10,15
371:17	177:24 192:13	438:22 448:13	143:13 149:14	132:8,11
<b>et</b> 7:9 8:6,13	194:8 197:2	450:17 454:15	150:22 157:15	138:10 139:22
451:10	211:7 214:24	456:1 467:14	176:12,21	140:2,5,21
<b>ethically</b> 110:9	215:10,11,13	471:22 475:15	214:2 226:18	156:22 157:1
<b>evaluate</b> 137:20	215:15 216:13	<b>evidencebased</b>	236:1,20 260:1	157:17,19
243:14 251:4	216:21 217:2,7	6:7 12:18	267:17 283:6	158:2 198:15
273:7 286:19	220:14 221:17	13:18 31:22	287:16 299:12	198:21 211:1
286:22 295:6	222:21 223:3	33:9,13 106:3	320:14 403:17	213:17,21
313:10 370:2	223:12,18,21	366:21	403:19,21	224:14,15
401:15	226:3 227:9,14	<b>exact</b> 90:13	413:19 419:22	225:17 232:20
<b>evaluated</b> 106:9	227:21 228:8	103:2 252:15	435:21 443:18	233:1 238:21
111:15 152:6	228:12 230:7	409:8 429:8	450:15 468:17	238:22 245:1,2
200:12,15	232:22 233:15	<b>exactly</b> 11:23	472:17	247:15,16
206:6 226:13	241:10 253:14	33:17 97:3	<b>exercising</b>	272:2,6 294:13
254:7 286:4	253:21 254:18	99:9 220:3	195:18 436:17	294:17 302:8
322:22 327:6	258:20 260:5	310:3 342:8	<b>exhibit</b> 6:4,7,8	319:13 350:19
340:4 402:6	260:10 265:15	355:17 398:4	6:11,12,13,14	350:20 352:21
405:9,10	266:15 268:13	408:20 478:12	6:16,17,19 7:4	353:20,24
<b>evaluates</b> 226:8	268:14,15,23	<b>examination</b> 5:6	7:7,11,14,16	354:9,15
<b>evaluating</b>	268:24 269:1	9:12 388:15	7:21 8:4,7,10	357:10 373:13
207:11 243:13	269:21 270:7	407:20 446:1	8:14,17,19	373:14 374:6

391:4 394:6,11 394:17 399:9 415:10,15 416:24 418:23 420:12,14 424:2,3,8,16 425:19 427:3,5 427:11,19,22 428:3,6 446:5 446:5 447:20 448:11 449:12 450:7 454:22 470:22,24 471:1,17 483:5 <b>exhibits</b> 6:1 7:1 8:1 262:20 330:14 425:1 446:4,8 462:2 482:23 <b>exists</b> 117:17 465:10 466:8 <b>expect</b> 201:4,14 202:21 203:20 212:13 <b>expedite</b> 258:15 <b>experience</b> 185:13 223:19 280:1 412:5 <b>experiencing</b> 161:8,13 <b>experiments</b> 481:5 <b>expert</b> 6:14,16 38:4 44:24 49:23 50:4,19 57:3 62:12 65:15 93:14 94:22 95:1,7 96:19,24 111:5 112:3,7 116:14 118:16 125:10 125:22 126:15 128:5 171:22 172:11 174:1,9 177:16 207:7 207:11 235:21 236:18 349:12	349:20 357:16 359:2 383:16 386:3,13 389:13,22 <b>expertise</b> 199:7 199:23,24 228:10 453:9 453:13 <b>experts</b> 34:15 94:9 452:1,5 453:22 454:7 <b>expires</b> 486:17 <b>explain</b> 37:15 70:14 137:18 153:4 203:17 264:2 297:14 299:3 366:23 456:14 <b>explaining</b> 284:20 <b>explains</b> 284:22 368:17 <b>explanation</b> 259:10 314:6 392:23 <b>explanations</b> 314:16 <b>expose</b> 160:16 <b>exposed</b> 107:13 108:1 109:11 158:22 161:14 163:1,2,24 164:8 170:24 201:22 205:12 205:20 206:2,8 208:3 259:3 327:22 341:11 341:16 347:16 347:22 382:14 436:21 438:18 <b>exposure</b> 155:2 155:14,19 156:14 158:19 159:3,7,18,19 161:9,10,13,21 161:22 162:16 162:17 163:15	163:16,21 164:10 168:11 168:22 169:4 181:3 197:1 206:16 217:22 218:4,4,20 219:8 227:2 275:4,21 276:5 276:24 277:8 277:19 302:23 307:7,10 308:4 325:8 327:8 328:12,24 335:10 337:24 338:4,11,15,21 344:12 345:23 346:20 381:11 423:15 426:2,6 428:14,21 429:1,23 430:9 430:16,18,19 449:21 456:16 <b>exposures</b> 421:20 <b>expressed</b> 457:9 <b>expressions</b> 300:8 <b>extent</b> 357:23 361:16 <b>exterior</b> 192:12 192:22 230:8 232:6 <b>external</b> 195:9 328:7 441:1,21 441:23 442:2 <b>externally</b> 441:12 442:17 443:10,12 <b>eyes</b> 244:12 <hr/> <b>F</b> <hr/> <b>f</b> 4:3 <b>facial</b> 300:7 <b>facilitating</b> 39:10 <b>facility</b> 46:11 <b>fact</b> 20:2 49:5	51:4 117:17 118:15 146:7 163:20 164:13 180:13 183:21 185:5 194:2,7 194:24 195:11 195:12 207:15 209:9 219:16 221:12,16 232:4 234:18 246:23 256:21 260:21 263:18 264:14 281:2 282:18 288:19 293:10 299:3 300:6 324:12 326:16 342:9 373:6 381:14 390:13 400:13 410:10 423:11 465:7 470:7 475:23 480:1 <b>factor</b> 270:15 273:24 274:7 274:16 276:5 298:21,22,24 301:20 333:21 356:12 361:7 367:14,22 376:11 387:24 472:11 <b>factors</b> 8:12 167:11 199:11 199:14 271:4 273:8,12 276:10,14,19 276:22 295:5 298:17 337:11 337:16 352:15 354:24 355:3,9 359:17 360:22 446:23 447:1,2 447:5,8,11 472:11 <b>facts</b> 292:19 294:20 296:20 296:22 314:16	314:17 420:18 <b>failure</b> 99:19 103:17 <b>fair</b> 11:3 24:21 29:7 31:3 34:23 35:10 36:6 38:6,21 39:4 40:8,17 41:9 47:13 55:18 61:18 64:21 73:12 77:10 84:1 93:11,12 95:4 96:19 97:15 118:16 121:18 167:12 187:6 236:3 243:20 270:18 286:13 327:2 331:24 335:16 349:6 371:11 <b>fairly</b> 331:6 <b>fall</b> 416:24 <b>fallopian</b> 8:7 193:7 272:8 382:16 440:13 442:12,19 456:24 473:19 <b>falls</b> 417:6 <b>familial</b> 355:2 447:5 <b>familialrelated</b> 447:2 <b>familiar</b> 10:12 18:12 115:8 117:16 120:10 121:19 184:14 <b>family</b> 59:5 447:1 <b>far</b> 65:9 167:24 168:1 172:7 196:24 328:16 347:18 379:21 386:15 397:8 <b>fascias</b> 406:24 <b>fashion</b> 478:3 480:17
---	--	---	--	--

<b>fast</b> 117:14	437:15	33:8 51:14	<b>first</b> 12:6 13:8	<b>following</b> 389:1
<b>faster</b> 149:9	<b>feminine</b> 16:3	112:6 130:22	13:23 14:16	454:14,16
<b>fault</b> 246:4	315:15 320:20	203:6 211:4,5	31:16 37:2	<b>follows</b> 9:11
<b>fda</b> 6:17 29:18	<b>fibers</b> 118:23	228:24 233:14	38:3,10 41:19	<b>followup</b> 38:1
29:22 30:3,7,9	155:13 448:17	237:8 238:7,9	41:24 44:23	99:21 237:16
30:14 122:6,10	452:16 455:4	273:3 277:12	65:13 66:17,22	242:16,22
123:12,18,21	455:15 459:9	312:9 329:7	74:24 101:7,12	243:4,18,23
124:2,9 127:24	475:19 476:4,8	330:17 331:11	159:1 181:7	244:14 245:20
138:11,23	476:18,21,23	331:21 354:2	208:10 212:6	246:10 257:3
140:22 193:13	<b>fibres</b> 6:19 8:19	373:12 424:22	220:21 233:13	266:6,7 267:1
221:12 228:17	<b>fibrosis</b> 215:2	447:3 460:4	234:10 242:12	267:22,23
229:14 230:6	408:9,19 409:3	471:20 473:3	253:11 258:5	289:4 290:14
232:1,11,15,20	409:4	<b>finding</b> 14:2,7	277:18 310:21	290:14
233:13,21	<b>fibrosus</b> 338:23	81:10 116:24	326:11 328:11	<b>food</b> 121:24
234:12 236:12	407:23	117:9 118:15	351:4,5 355:5	124:19 126:16
236:16 237:18	<b>fibrous</b> 111:2	124:18 156:4	355:17 362:10	234:8
329:11 365:7	117:12 118:8,8	160:24 178:13	379:15 384:15	<b>footnote</b> 383:2,8
366:3 369:20	118:24 162:5	201:14 206:20	<b>firstdegree</b>	<b>footnotes</b> 382:20
384:15,20	164:14 168:8	215:5,8 237:5	355:18	<b>foregoing</b> 485:7
385:7 407:18	170:2 179:2	240:21 241:22	<b>fit</b> 286:9	486:4
447:22 448:11	284:17 372:9	241:24 291:9	<b>five</b> 48:2 65:23	<b>foreign</b> 23:15
448:15,22	375:4,6,11,17	311:10 317:14	159:5 278:6,9	211:8 215:1
471:3,9,17,20	375:20 377:14	324:8 368:18	325:1 426:4	436:11,19
<b>fdas</b> 31:2 127:17	378:14 379:1,2	419:3,18 420:6	428:24 450:24	437:1 443:16
127:20 128:20	379:7 400:3,15	448:4	465:20	455:15
128:22 129:16	401:5 404:5	<b>findings</b> 106:16	<b>fix</b> 98:2	<b>forgetting</b>
129:18 137:21	407:17 456:17	116:3 130:12	<b>flat</b> 331:9	370:24
230:1 233:23	457:4,15,19	137:21,21,22	<b>flaws</b> 384:16	<b>form</b> 13:5 15:14
235:8,24 369:7	459:7,19,23	138:11 152:23	<b>flip</b> 426:9 429:4	18:7 20:12
384:10 448:2	460:5,8,16,20	164:7 197:23	<b>floor</b> 334:5	21:16 22:8,21
<b>feature</b> 258:16	465:10 466:10	204:17 209:19	<b>flows</b> 192:9	23:6,19 26:3
<b>federal</b> 84:9	466:16,19	239:23 255:9	<b>flw</b> 1:5	26:18 27:13
87:2 88:11	467:6,9	288:20 312:11	<b>focus</b> 199:4	28:21 29:9
299:19 300:19	<b>field</b> 13:3 366:1	312:18 464:7,8	293:19	30:6,19 33:5
<b>fedex</b> 368:17	397:14	464:9	<b>focused</b> 59:18	35:5 36:9
<b>fee</b> 395:1,15,18	<b>fifth</b> 3:3 356:7	<b>finds</b> 448:22	63:2 85:3	37:12,23 55:14
396:6	<b>figure</b> 125:10	<b>fine</b> 299:24	<b>folks</b> 244:3	57:8,18 58:14
<b>feel</b> 71:7 129:8	<b>final</b> 52:18 97:9	300:3 394:8	279:19 304:16	60:8,19 62:15
143:13 149:17	97:23 140:8	<b>fingers</b> 97:6	308:21 309:10	63:4 64:5 65:2
202:23 245:12	173:2 380:5,5	<b>finish</b> 79:9 82:15	310:6 315:24	65:17 66:21
301:9 399:13	482:15,19	83:22,24 85:6	324:4 341:11	67:5 73:8,14
<b>fellowship</b>	<b>finally</b> 384:2	102:21 210:10	345:22 354:20	73:21 74:6,20
133:21 481:14	385:20 386:23	213:9 231:18	364:4 365:6	75:6,10,19
<b>felt</b> 61:1 77:3	<b>financially</b>	243:1 299:17	366:3	77:15 78:8,17
254:16 306:8,9	485:13	403:15	<b>followed</b> 188:6	80:1,13,22
306:9 358:17	<b>find</b> 8:17 13:12	<b>finished</b> 102:20	188:24 190:4	81:8,18 83:2
<b>female</b> 436:13	14:11,12,13	481:14	243:5,9 255:4	84:13 86:24

88:21 89:9	179:15 180:11	298:4,14	395:9 396:4,13	478:2 479:15
93:9 94:24	181:5 182:3,22	299:16,18	396:19 397:5	480:17 482:20
95:10,13 96:21	183:14 184:1	300:2,20	397:21 398:2	486:6
97:19 98:17	186:6,22 187:8	301:23 302:15	398:20 399:18	<b>formal</b> 35:2
101:1,17 102:3	187:19 188:17	303:8,15 304:7	400:21 402:4	<b>format</b> 37:1,14
103:7,20	189:10,20	305:16,24	402:18,23	38:14,16
104:13 105:14	191:4,17 193:1	306:14 307:5	403:5 405:16	<b>formation</b> 411:8
107:3,16 108:4	194:14 196:2	307:16,24	406:1,7 408:15	<b>formed</b> 58:9,20
108:13 109:6	196:12,20	308:13 309:3	408:17,23	61:22 66:18
109:17 110:23	197:12 201:7	309:14 310:15	409:11,19	78:11,14,24
111:21 115:2	201:20 204:2	312:22 313:14	410:15 411:11	106:17 149:3
115:21 116:7	204:20 205:8	314:13,23	412:3,21 413:1	149:11 150:13
117:2 118:4,18	205:15 206:10	316:3 317:5	413:8,15,20	150:19 151:16
118:22 119:11	207:22 209:24	318:1,14 322:5	414:14 415:4	268:16 281:13
119:22 120:14	211:11,19	322:16 323:5	415:18 416:9	348:20 357:2
121:13 122:4	214:17 215:7	323:12,21	417:4,16,24	372:14 411:17
122:22 123:17	216:16 217:1	324:16 325:10	418:12,16	<b>formerly</b> 446:6
124:5,14 125:1	218:2,24	326:19 327:3	419:11,23	<b>forming</b> 30:16
125:13 126:1	220:12 222:2,9	327:12 328:15	420:4,18 421:2	65:14 95:8
126:10,18	222:17 223:14	329:1,15	421:23 422:10	107:10 108:8
127:9 128:8	224:8 226:16	331:16 332:7	422:20 423:17	141:20 152:12
130:6,15	228:5 229:21	333:10,16	428:17 430:24	157:6 170:12
131:16,24	230:11 232:14	334:18,24	431:7,11,17	172:17 181:2
133:3 134:7,20	233:4,19 236:2	335:9,21	432:11 433:16	196:18 205:11
135:3,15	236:20 237:21	336:15 337:1	434:21 435:9	208:22 271:23
136:11,21	242:3 243:22	338:8 339:10	435:22 436:5	303:3,12
137:14 138:13	244:7,16	340:14 341:14	437:5,22	345:16 360:21
138:24 140:11	245:23 247:2	342:1,12,23	438:21 439:7	<b>forms</b> 75:14
140:19 145:1	248:6 249:8	343:19 345:12	439:17 441:18	76:3,5 77:23
145:22 147:2	251:18 252:6	346:2 347:21	442:22 445:3	78:5 406:17
147:23 148:21	252:14 254:7	349:14 350:15	448:7 449:7	407:5,7
149:19 150:6	254:11 260:9	353:7 357:5	450:21 452:4	<b>formulate</b> 57:11
150:23 151:11	261:5,16 264:5	362:22 363:22	452:20 453:3	62:8
151:22 152:18	264:19 265:19	364:9,23	453:10 454:1,3	<b>formulated</b>
154:3 156:8,16	266:20 267:18	365:11 366:7	455:5,19,20	62:10
158:21 159:10	268:12 270:24	366:20 367:7	456:21 457:12	<b>formulating</b>
159:15 160:4	271:10 272:23	367:17 368:8	458:9,23 459:8	13:23 14:16
161:3,24 163:7	274:20 275:10	368:24 369:13	459:18 460:2	<b>formulation</b>
163:18 164:12	276:9 277:3	370:13 372:5	463:4,6,22	379:5
165:9,11 166:2	279:9 280:15	374:17 376:2	464:19 465:14	<b>forth</b> 392:12
167:14,18,23	280:23 281:12	376:21 377:9	465:24 466:13	485:9
169:1,19	282:23 284:14	377:18 381:19	466:22 467:10	<b>found</b> 111:3,14
170:18 173:6	285:6,17	382:10,24	468:20 469:18	117:3 144:22
173:20 174:4	286:15 288:12	383:20 384:19	470:13 474:6	146:6,18
175:4,16	288:23 289:23	385:10 386:11	474:20 475:3	148:16 174:10
176:13 177:13	290:11 291:19	387:5,20 390:7	475:14,22	198:10,18
178:5,18 179:8	295:20 297:3	390:19 391:21	476:6 477:8,12	200:20 209:2



209:10,21	108:16 330:7	249:13 265:12	473:17	415:5 446:19
211:7 212:13	332:1,16,22	265:23 266:7	<b>genotoxic</b> 381:3	447:19 479:16
214:14 215:16	<b>frequent</b> 257:5	266:12	381:8 382:8	482:12 486:5
216:13 238:13	291:23 332:20	<b>gene</b> 380:22	<b>geologist</b> 115:10	<b>giving</b> 122:9
241:1 249:10	<b>frequently</b>	381:5,5 382:1	115:12	130:23 169:7
290:9 306:10	331:17	382:1	<b>geology</b> 453:21	460:22
307:20 313:20	<b>friday</b> 35:21	<b>general</b> 13:12	453:23 454:7	<b>gloves</b> 19:16
369:8 379:2	<b>fridays</b> 42:18	15:10 21:9	<b>georgia</b> 49:11	22:4,11,18
381:5 400:4	<b>friend</b> 43:8	33:12,18 48:2	<b>gertig</b> 242:18,23	23:3,8,13
402:7 435:3,7	358:14	106:5 107:17	243:5 265:23	24:23 25:3,8
436:24 448:16	<b>friendly</b> 42:19	126:23 166:18	<b>gertigs</b> 242:17	25:12 26:1,7
460:8,16	480:3	187:10 228:15	<b>gestures</b> 300:8	26:15 27:1,10
463:24 464:15	<b>friends</b> 42:20	232:16 286:16	<b>getting</b> 51:3	27:17 28:4,7
<b>four</b> 40:3 47:8	59:5	287:22 352:17	125:9 130:16	28:18,24 29:19
114:21 235:15	<b>front</b> 53:2 68:14	385:16	190:24 298:19	29:24 31:1
282:4,11	87:18 120:16	<b>generally</b> 25:5	345:9 346:14	407:19,20
448:20 471:8	302:8 348:22	32:15 33:10	352:18 355:7	<b>go</b> 11:2 13:9
471:13	349:2 447:23	54:12 56:19	369:21	14:11 48:16,18
<b>fourth</b> 102:4	449:13	156:10 167:10	<b>ghassam</b> 394:24	48:19 65:5
227:1 356:3,7	<b>full</b> 48:6 119:12	193:11 212:20	<b>giant</b> 215:1	89:13 101:7
<b>fragrance</b>	159:1 214:19	232:11 258:22	<b>girls</b> 159:18	117:14 139:4
174:11 183:5,8	310:21 428:5	280:4 317:19	<b>give</b> 26:4 47:4	155:8 162:2
183:22 184:3	444:11,17	364:17 383:4	75:1 91:19	165:12 181:6
372:11 377:14	<b>fully</b> 59:1	439:8 473:5	100:13 103:8	186:18 208:11
379:4,5 400:17	<b>fumes</b> 432:6	<b>generated</b> 40:5	114:6 122:21	252:18 260:14
404:11 406:13	<b>funding</b> 51:3	<b>generation</b>	129:13 137:6	263:3,14
420:21,22	386:16 481:4	40:14	169:6 202:13	279:21 281:22
421:3,6	<b>funny</b> 136:8	<b>genetic</b> 108:22	236:2 238:20	319:17,18
<b>fragrances</b>	<b>further</b> 461:22	219:16 221:1,1	240:10 254:22	321:12 325:3
111:4,7 162:6	470:16,20	355:16 381:10	270:1 301:9	330:20 334:4,4
164:19 170:4	482:8,17	381:17 382:13	318:23 325:16	334:5 361:20
171:16 172:19	483:19 485:7	<b>genetically</b>	414:9 426:14	365:19 388:6
176:20 177:9	485:10	328:3	427:1 444:17	399:18 424:15
179:13 180:4,7	<b>future</b> 8:14	<b>genital</b> 8:4 14:21	469:5	424:19,23
180:22 181:4	350:24 472:8	14:23 106:20	<b>given</b> 26:5 54:16	426:11 437:13
183:11,16		106:22 107:1	55:5,16 78:1	440:14 443:19
376:9 378:14	<b>G</b>	107:13 109:3	85:10 118:5,13	445:15 460:14
400:6 401:8	<b>g</b> 4:6	109:22 153:10	126:20 144:6	461:12,14
404:10,16	<b>gallagher</b> 42:14	191:2,15	181:15 183:17	<b>goes</b> 84:19
458:14 465:11	43:14,21 44:16	192:17,23	189:24 246:11	134:13 269:18
466:9	44:20 67:1,6	197:3 229:6	246:23 255:8	273:23 332:9,9
<b>free</b> 123:15	<b>garber</b> 2:8	259:3 264:9	267:6 269:7	332:9 440:3,12
124:12 129:8	<b>gates</b> 242:16,22	302:22 309:19	290:15 299:14	440:13
143:14 202:23	243:4,9 244:20	336:17 338:5	301:12,14	<b>going</b> 14:5,6
245:12 301:9	244:23 245:10	356:13 357:2	311:14 333:6	20:4 24:19
407:1,1 449:2	245:18,20,21	441:2,21,23	334:9,14	26:4 39:23
<b>frequency</b>	246:1,9 247:12	442:2 443:1	361:17 367:21	65:17,24 76:21

79:6 82:8 83:9	53:12,18	361:15 362:24	414:11	<b>health</b> 8:8 30:4
83:17 85:19	135:17 246:14	364:12 453:6	<b>hang</b> 208:5	30:8,15 32:6
86:5 87:3,14	246:19 293:9	480:3	<b>happen</b> 44:8	46:16 48:13
87:23 88:17	316:11 326:14	<b>gynecologic</b>	95:20 195:12	51:20 52:2,7
89:17 91:6	388:17,18	42:21 59:10,21	346:13 409:13	52:15 55:10
95:22 115:11	<b>gordon</b> 3:11	60:3 62:23	<b>happened</b> 45:4	63:9,13,19
115:22 120:14	<b>gordonrees</b> 3:12	73:3 74:4	123:2 263:17	64:1 90:7,20
120:19 129:13	<b>gosh</b> 316:11	133:8 193:12	308:19	90:21 227:18
134:2 139:6	<b>gotcha</b> 258:13	194:22 195:8	<b>happens</b> 188:23	236:23,24
141:22 149:8	<b>gotshal</b> 2:18 3:2	221:19 222:4	189:1 359:5	237:1,16
149:20 152:19	<b>gov</b> 6:17	222:12 272:14	409:6 439:9	242:12 243:6
157:16 165:10	<b>governmental</b>	286:11 296:21	<b>happy</b> 11:9 39:1	245:21 246:10
165:12 169:20	480:17	325:24 341:9	40:15,23 42:18	247:1,13 249:4
170:23 172:1	<b>grab</b> 38:1	352:18 353:2	299:11 300:22	252:3 257:7,8
181:6,13	<b>grains</b> 435:4	397:13 398:15	301:1	265:14,24
195:16,19	<b>grams</b> 191:10	453:7 480:8	<b>hard</b> 34:22	266:13 267:3
196:14,21	<b>grant</b> 386:16	481:13,23	71:15,17,22	270:14,21
197:13 198:13	<b>granulomas</b>	<b>gynecological</b>	107:4,7 108:17	271:8 272:9
203:9 209:1	23:14 407:17	186:2 292:8	110:13 162:7	280:12 281:8
210:8,24	407:22	<b>gynecology</b>	328:19 333:23	281:16 321:3,9
211:20 212:1,6	<b>gray</b> 360:12	223:20 228:9	334:8,11 336:1	321:10,12,12
213:11 215:20	<b>great</b> 19:3 33:7	228:15	364:21 367:10	321:16 322:23
219:2 230:11	<b>greater</b> 49:4	<hr/> <b>H</b> <hr/>	375:9	323:13 324:3
230:22 231:8	167:2 238:13	<b>h</b> 4:6	<b>harlow</b> 320:23	324:14,18
237:14,24	239:23 281:18	<b>hadnt</b> 15:24	<b>hasnt</b> 169:9	348:3 353:5,13
238:7 241:8	473:8	16:8 37:23	190:4 235:18	364:21 365:3
244:21 252:20	<b>green</b> 360:14	57:9 58:20	391:10 412:17	366:1
260:17 262:5,8	<b>griffin</b> 17:9,16	479:7	<b>havent</b> 16:6	<b>hear</b> 89:5 220:2
277:15 279:21	17:22 18:9	<b>half</b> 42:1 210:9	53:10,12 68:7	271:12
283:9 285:18	19:2	308:24 478:16	74:3 91:7,16	<b>heard</b> 269:11
299:21 315:6	<b>groins</b> 334:5	<b>halfway</b> 440:21	91:18 150:7	399:1,4,4
315:20 326:2	<b>group</b> 159:2	<b>hand</b> 12:15	151:16 162:1	481:16 482:1
327:13 337:23	227:9 283:16	31:15 61:11	185:23 189:11	<b>hearing</b> 342:3
341:16 345:13	341:16 426:1	93:4 120:20	291:10 360:5,9	399:8 401:19
371:1 378:3	428:20 429:8	156:21 232:19	362:6,18	460:11
388:4,9,24	430:15,19	388:5 391:13	365:17 373:5	<b>heavy</b> 111:2
389:2,4 394:12	455:12 470:10	428:2 473:4	374:13 375:1,2	156:14 158:18
394:16 397:17	<b>groups</b> 258:21	<b>handed</b> 31:6	387:14 394:5	159:6 161:1,8
399:18 401:24	365:1	113:12 116:19	398:9 413:2	161:13,20
402:5 425:3	<b>guess</b> 262:5	121:7	432:12 439:4	162:6,16
430:6 435:11	396:19 417:24	<b>handing</b> 11:11	439:14 444:22	164:16 165:6
436:15 444:1	<b>guessing</b> 325:15	100:21 213:20	476:11 480:13	168:6 170:3
445:17 461:16	<b>guideline</b> 280:3	224:13 225:16	<b>hazard</b> 160:17	179:2 346:20
478:6 484:4	<b>gut</b> 169:11	272:5 350:23	<b>hbolaw</b> 2:14	347:16,22
<b>golkow</b> 4:8	<b>gyn</b> 20:22 48:6	353:23	<b>head</b> 200:24	372:9 373:3,6
<b>good</b> 9:14,15	94:3 348:8	<b>handpicked</b>	310:11 332:23	373:9,18,23
12:24 13:6	360:11,11		332:23	375:20 377:14

378:14,23 400:3 401:6 426:5 428:14 429:1 430:17 432:9 465:11 466:9 <b>held</b> 1:14 444:10 <b>heller</b> 7:9 209:7 210:11,13 213:9,22 216:12 <b>help</b> 53:11 112:12 245:5 277:15 362:1 432:22 433:2 <b>helpful</b> 37:24 45:18 243:24 <b>helps</b> 385:12 <b>henderson</b> 215:22 216:8 217:5 <b>hereinbefore</b> 485:9 <b>heres</b> 53:14 62:20 86:7,20 123:1 251:9 305:5 377:12 426:21 <b>heritage</b> 356:9 <b>hes</b> 220:21 393:17 424:17 481:19 <b>heterogeneity</b> 250:11,18 251:4 258:20 259:10 <b>hiding</b> 320:11 <b>hierarchy</b> 382:21 383:13 <b>high</b> 171:12 198:19 199:15 200:8 207:13 239:18 263:10 292:3 293:4 295:13 311:23 368:16,22 371:8,10	375:14 421:14 422:6,7,16 423:14 470:8 <b>higher</b> 245:18 246:8 251:16 260:20 262:11 292:15 297:9 347:5 <b>highest</b> 260:9,13 292:20 294:23 295:17 345:22 345:22 <b>highlighted</b> 426:24 <b>highlighting</b> 483:21 <b>highquality</b> 199:1 246:2 251:12 <b>hill</b> 286:1,7,13 286:17,24 287:4,5 288:16 333:13,18,22 366:17,23 367:4 368:16 <b>hilton</b> 1:14 <b>hint</b> 195:6 326:11 329:24 <b>hired</b> 57:2,9,13 58:11 59:23 60:4 61:24 62:11 436:24 <b>hiroshima</b> 326:6 <b>hispanics</b> 8:10 295:2,7 <b>histologic</b> 239:3 239:24 241:6 248:4 <b>histology</b> 247:23 248:11 249:20 250:4 <b>historical</b> 135:21,23 459:22 <b>historically</b> 298:1 <b>history</b> 355:20	355:23 356:4 447:1 <b>hold</b> 57:15 67:2 67:12 116:12 132:19 133:13 134:4 150:9 169:2 210:22 336:20 343:13 357:11 430:5 460:10 465:4 465:20 <b>holding</b> 444:16 <b>homework</b> 137:10 <b>hopkins</b> 112:21 112:24 113:14 113:20 114:3,7 114:22 118:13 121:9 132:1,6 138:10 139:22 140:1,5,21 142:22 374:6 <b>hormonal</b> 356:20 447:11 <b>hormone</b> 273:19 369:2,3 <b>hormones</b> 337:17 <b>hospital</b> 10:3 46:13,20 47:6 <b>hotter</b> 318:21 <b>houghton</b> 265:23 <b>hour</b> 38:5 42:1 79:6 210:9 358:10 478:17 <b>hours</b> 37:16 38:4,15,16 39:8 41:21 42:18 47:5,6 97:15,21 358:6 <b>house</b> 14:4 71:15 <b>housekeeping</b> 483:3 <b>houston</b> 48:12 48:17	<b>hulfish</b> 2:19 <b>human</b> 14:13 106:7 166:23 169:4 175:14 178:1,2,9 385:8 434:3 457:19 <b>humans</b> 6:10,21 7:12 8:21 31:10 169:6 175:20 177:11 193:10,11 <b>hundreds</b> 408:4 411:24 437:1 <b>hurst</b> 2:13 <b>hygiene</b> 315:16 320:20 <b>hypothesis</b> 195:7 <b>hypothetical</b> 465:24 <b>hysterectomy</b> 195:4	319:3,10,16 320:22 323:9 323:18 340:7,9 340:17 341:22 346:19 347:18 365:7 423:11 423:18,21 424:10,11,12 425:20 426:1 426:10 428:5 429:19 430:13 430:15 431:2,4 431:20 434:7 454:20 455:12 457:10,14,18 459:4 469:9,15 470:10 476:2 476:12,17 <b>iargs</b> 32:18 154:14 156:22 165:3 285:3 341:3 431:23 454:24 <b>id</b> 12:3 75:23 127:22 128:24 143:7 155:8,10 156:17 175:17 175:20 223:6 224:9 262:3 300:21 340:16 389:6 <b>idea</b> 74:11 114:20 169:15 209:16 229:5 295:15 337:2 416:23 419:8 <b>identical</b> 103:5 <b>identification</b> 11:16 12:9 31:13 35:14 36:19 52:24 66:14 100:23 128:16 157:2 198:22 213:18 224:16 233:2 238:23 245:3 247:17 272:3
---	---	---	--	--

294:14 350:21 353:21 427:23 <b>identified</b> 239:18 293:3 295:13 311:22 311:23 417:9 <b>identifies</b> 274:5 361:6 <b>identify</b> 18:23 26:13 68:13 75:17 117:5 236:15 274:10 354:24 425:18 <b>identifying</b> 109:13,18 245:18 246:7 262:10 <b>ill</b> 9:17 10:14 13:11 21:23 24:12 79:9 82:9,12 92:21 101:6 128:21 135:9 144:4 149:23 151:1 156:21 157:4 198:11 203:3 211:15,16 226:18,24 232:19 238:20 239:2 240:1,10 243:1 258:1 275:20 278:22 288:24 299:11 302:17 303:19 320:17 399:18 471:14 <b>im</b> 11:11 12:21 15:9 17:13 19:1,5 24:19 26:4,12 27:7 29:4,12,13 38:19,22 39:1 39:23 40:15 42:21 52:13 53:11,14,18 61:9 62:16 65:19 67:9	76:21 80:23 81:19 82:7,24 83:8,17 86:5 95:24 97:14 100:21 102:23 108:6 109:18 110:9 112:5 115:10,11,22 116:17 117:3,4 117:14,14 118:19 120:21 120:23 121:1 123:18 125:4 128:18 129:13 129:23 130:16 130:21 131:6 132:21 133:9 134:21 136:7 136:22 137:15 141:22 142:3 142:11,19 144:9 145:12 145:23 146:16 152:19 153:6 160:12 162:2 163:8 164:13 165:10,10,11 165:16 167:24 168:17 169:3 169:20 172:13 175:5,19 176:16 177:15 177:22 178:19 178:20 179:10 180:12,16 181:6 183:2,18 185:14 186:16 189:11 191:5 195:19 196:6 196:14,21 197:13 203:9 204:3 205:16 206:13,13 208:7,10,18 209:1 211:4,20 212:1,2,15 213:3,4,20	215:20 219:6 222:10 224:13 224:20 230:22 231:5,8,21 232:3 237:24 241:8 242:7 244:21 247:3 249:22 250:2 250:15,15 251:9 255:11 262:3,4,5,8,18 267:7 272:5 277:12,14,18 279:21 280:16 282:24 283:9 285:18 291:5 295:11 296:19 298:8 299:12 299:20 300:10 300:11 302:10 302:19 303:9 304:23 305:2 308:1 309:18 310:20 315:20 319:22 321:20 325:11 326:2,5 327:13,14 330:21 335:10 336:8 339:21 339:22 340:20 342:2,3,14,15 343:8,20 344:2 344:3 345:13 353:11,23 354:13 356:23 363:3 366:11 367:2 370:6,24 371:1 375:18 384:12 386:17 388:4,24 390:12,24 393:14 394:12 394:16 395:18 396:20 397:8 397:10 401:17 402:5 403:13 405:4 407:7	408:2 411:4 412:7,12,15 414:2 416:11 422:13 423:6 429:6,11 432:14 433:11 433:17 434:16 434:22 435:5 435:11,20,23 436:6 437:6 438:12 442:23 444:9 447:7 453:11 460:11 460:12,24 464:9,21 466:14,23 467:4,8 472:18 472:19 474:21 475:4 476:15 478:6 <b>imerys</b> 3:14,18 79:13,16,17,19 81:5 388:20,22 405:13 406:10 406:14 414:3 414:10,19 415:9 416:14 471:13,15 <b>immune</b> 108:23 337:20 <b>impact</b> 199:12 200:18 <b>impartial</b> 32:15 <b>implication</b> 21:22 <b>importance</b> 352:16 <b>important</b> 19:22 30:15 74:16,23 77:4 128:3 160:8,13 165:21 170:13 181:1 211:17 243:13 258:16 263:9 304:12 305:13 333:8 333:22 353:3	353:14 367:14 367:22 389:12 389:16 390:4 390:13,21 458:20 480:5 <b>improper</b> 261:2 <b>inaccurate</b> 446:15 <b>inadequate</b> 274:16 276:6 276:11,23 <b>inappropriate</b> 300:9 <b>incidence</b> 292:21 294:22 294:23 296:24 297:24 <b>incident</b> 292:9 <b>include</b> 15:17,19 15:22 90:6 143:4 148:14 199:16 221:14 236:8 244:13 244:20 246:12 246:18,23 247:12 249:13 264:11,17,21 278:16 282:8 282:10,13 356:17 377:21 377:23 450:15 450:16 451:12 466:9 <b>included</b> 146:14 245:8,11,15 247:5 249:5 259:1 280:10 451:7 <b>includes</b> 41:20 116:19 186:2 276:23 331:8 470:9,14 <b>including</b> 16:4 16:11 55:20 183:11 220:14 264:7 281:15 343:3 356:19
---	--	---	--	--

372:10 448:3 451:9 <b>inclusion</b> 258:17 <b>incomplete</b> 465:24 <b>inconsistent</b> 275:7 277:17 446:18 <b>incorrect</b> 172:12 270:4 <b>increase</b> 153:11 159:20 160:1,5 160:6 163:22 165:18 166:6,7 166:10,15 167:18 169:17 174:15 176:8 176:15 179:24 180:8,18,19 181:19 190:4 206:12 237:9 238:5,10,14 240:22 241:1 241:14 242:13 249:11,16,20 250:3 251:21 267:5 268:4 290:17,17,23 293:18 297:20 308:2 330:7 331:13,18 332:3,16,19,19 339:19 422:22 <b>increased</b> 18:4 19:12 57:23 164:23 182:9 195:23 196:9 197:2 200:22 204:10 205:4 208:14 237:6 241:23 242:9 265:8,10,16 266:17 267:14 273:13 274:1 275:5 277:9 282:5 290:9 291:17 293:21	307:6 308:3 317:17 331:4 361:18 422:17 423:5,9 438:5 472:13,24 <b>increases</b> 58:23 64:23 160:14 176:3 181:17 219:8 234:24 241:5 248:19 298:23 376:24 387:15 401:1 404:20 <b>increasing</b> 110:4 <b>independent</b> 174:1 262:12 381:12,13 <b>index</b> 5:1 <b>indiana</b> 49:7,11 51:6,16 <b>indianapolis</b> 46:10,17 47:9 49:5 51:17 52:8 <b>indicate</b> 19:22 105:18 140:15 359:13 <b>indicated</b> 56:13 90:3,14 93:13 117:24 <b>indicates</b> 118:15 <b>indication</b> 57:22 281:4 <b>indirectly</b> 238:1 <b>indisputable</b> 228:19 <b>indistinguishable</b> 419:4,19 <b>individual</b> 107:12 108:19 108:20 151:8 170:15 181:12 181:17 183:6,8 256:24 261:20 263:4 298:22 325:12 327:15 328:5 337:15	337:19 357:20 362:23 374:24 <b>individually</b> 77:18 266:5 <b>individuals</b> 243:18 337:8 337:10 338:3 <b>indoor</b> 476:2,15 <b>induced</b> 209:22 <b>induces</b> 380:22 <b>industrial</b> 140:15 416:20 417:1 <b>industries</b> 416:15 <b>inert</b> 192:2,4 194:17,23 221:10 223:21 437:13,17 442:24 443:3 <b>inevitably</b> 407:10 <b>infer</b> 318:24 <b>inference</b> 219:10 322:17 <b>inferring</b> 322:7 <b>infertility</b> 274:10 <b>inflammation</b> 19:22 20:2,5 20:14,14,18,24 21:1,5,6,10,13 21:17,18 22:3 22:5,14 23:4,8 25:7 26:8,8 27:2 28:2,9 174:18 175:7 176:18 177:10 177:18 178:2 178:14,21 179:5,12 180:14,19 181:19 182:1,5 182:9 183:12 183:17,22 184:4,7,10 192:17 210:21	212:23,24 213:2 216:5 217:18 218:21 219:13,14 220:17,24 372:8 376:10 380:9,19 381:12,13,16 381:20 384:6 385:3,14 400:5 400:7 401:9 406:18,20,22 406:23 407:3,4 407:6,8,10,12 407:14 408:9 408:16,18 409:1 411:7,13 411:17 437:20 445:1,7,10,12 454:13,14,16 456:2,4,6,9 459:3 474:2 <b>inflammatory</b> 22:19,23 153:21 170:10 171:20 174:18 175:1,9,13 176:18 177:4 177:17 179:21 180:5 184:19 185:2,8 188:2 188:7 189:17 189:22 209:22 210:2 211:24 212:9,14 214:14,20 215:12,17 217:8,14,23,24 218:6,9,13 287:12 372:12 376:8 377:2 382:3,14 402:9 403:9 404:11 404:12,17 421:4 458:15 <b>inflated</b> 313:12 <b>inflating</b> 307:15	<b>inflation</b> 311:1 313:24 <b>influence</b> 199:11 <b>inform</b> 36:5 140:24 142:9 158:2 256:19 317:21 362:1 362:19 411:12 <b>information</b> 13:11 14:9,12 27:9 30:21 34:7,17,24 36:15 58:6 59:1 70:18,21 75:18 76:4,15 83:1 84:4,10 85:8 86:10 88:8,19 89:6,9 98:5,12 100:19 112:22 117:23 118:6,11 119:18 126:24 127:23 128:4 128:10 136:2 142:8 143:23 146:3 148:6,7 173:9 190:22 196:22,23 223:16 224:3 236:9 243:15 244:4 248:8 254:23 266:3 272:15,21 273:4,12 285:9 287:6,7 288:15 289:4,13 290:15 295:12 323:4,9,14,18 325:16 328:17 329:19 338:13 352:4,13,20 353:13 361:4 365:13 385:24 390:1,24 391:1 416:7,12 420:19 421:10 437:7 458:24
--	---	---	--	--



483:13 <b>informative</b> 385:12 448:23 <b>informing</b> 352:17 <b>informs</b> 19:10 141:5 144:20 468:13 <b>ingestion</b> 421:17 422:1 <b>ingredients</b> 6:17 174:17 176:8 176:15,17 184:4 467:1 <b>inhalation</b> 156:10 204:8 204:14 205:13 206:16 208:4,9 208:18 209:18 338:5,16 340:11 341:4 341:11 345:2 345:24 346:12 347:17 457:1 474:11 <b>inhale</b> 208:23 209:13 345:8 476:23 477:13 <b>inhaling</b> 206:2 475:10 <b>initially</b> 243:19 456:15 <b>initiate</b> 185:2 <b>initiative</b> 236:24 237:1 265:24 321:9 324:3,14 324:18 <b>initiator</b> 376:11 <b>injected</b> 190:23 <b>inquire</b> 338:20 338:24 <b>inside</b> 184:18 195:15 409:7 409:13 <b>instance</b> 166:23 277:24 328:2 <b>instilled</b> 411:2	<b>institute</b> 270:14 270:19 271:2,7 271:13,17 272:20 273:7 273:23 274:5 274:15 275:2 276:4,14 277:6 277:23 278:4,6 279:20 280:3 281:20 282:17 449:12 <b>institutes</b> 271:22 273:12 279:2 <b>institution</b> 137:22 228:17 348:2 444:11 <b>institutions</b> 59:22 187:4 <b>instruct</b> 83:9,18 86:6,14 87:7 88:2 <b>intake</b> 422:21 <b>intend</b> 360:7 362:7,8 <b>intended</b> 353:16 <b>intention</b> 239:22 <b>intercourse</b> 195:16 436:15 <b>interest</b> 363:5 394:21 395:3 396:17,21 <b>interested</b> 43:10 45:20 67:14 95:24 485:13 <b>interesting</b> 480:5 <b>intermittently</b> 47:3 <b>internal</b> 16:22 17:18 25:17 72:16,19 73:4 73:12,15 74:14 74:17 75:1,6 75:18 76:4,23 77:7 78:14 79:18 81:14,23 82:1,6 83:5	88:20 <b>international</b> 32:5 222:7 223:10 224:5 227:18 <b>interpret</b> 132:13 464:7 <b>interpretation</b> 188:18 265:2 285:3 314:5 328:18 366:17 <b>interpreted</b> 366:23 <b>interpreting</b> 116:2 <b>interrupt</b> 82:16 243:2 367:2 <b>interrupted</b> 82:14 202:12 242:20 <b>interstitial</b> 338:23 <b>interval</b> 369:21 <b>intervals</b> 263:12 263:20 369:15 370:2 <b>interview</b> 306:12 307:1 308:11 309:8 310:23 314:21 <b>interviewed</b> 303:6 304:17 307:8 308:5,21 <b>interviews</b> 55:6 55:17 56:13 63:24 <b>intraabdominal</b> 19:17 <b>intrinsic</b> 327:20 328:6 <b>introduce</b> 359:18 436:18 <b>introduced</b> 43:12 436:13 439:1 <b>invasive</b> 302:24 <b>investigate</b>	194:3 220:5 305:13,18 312:18 339:1 343:1 455:21 <b>investigated</b> 110:1 249:1 438:15 <b>investigating</b> 153:2 339:21 438:16 <b>investigation</b> 51:11 194:11 379:9 <b>investors</b> 51:14 <b>invited</b> 54:20 63:16 <b>invoice</b> 37:2,11 38:9,17 39:7 39:15,20 <b>invoices</b> 6:12 36:17,21 37:3 40:1,6 41:3,9 <b>invoked</b> 259:9 <b>involve</b> 193:21 <b>involved</b> 43:11 45:21 60:22 67:15 390:5,15 395:5 397:14 <b>involvement</b> 357:24 <b>involving</b> 456:13 <b>irritant</b> 111:6 <b>irritants</b> 171:20 <b>irritating</b> 162:7 164:20 170:3,9 372:11 401:9 404:12,17 421:5 458:15 <b>isnt</b> 75:13 115:4 160:9 165:21 168:1 181:1,15 267:10 296:13 326:14 333:1 396:2,9,16 397:24 432:18 441:4 468:1	<b>issue</b> 14:20 28:19 48:9 87:10 107:5 254:17 364:3 <b>issued</b> 468:5 <b>issues</b> 30:15 54:22 55:10,17 63:18 165:15 237:10 265:20 353:4 364:21 <b>issuing</b> 94:20 <b>italian</b> 135:22 379:23 <b>italy</b> 379:14,14 <b>item</b> 31:5 483:3 <b>items</b> 372:16 376:17 377:6 400:15 401:21 <b>ive</b> 26:5 34:3 55:1 56:3,5 98:10 108:5 111:13,15,22 131:7,8,17 134:13,23 179:16 184:2 185:13 213:21 223:15 269:11 300:5 332:21 374:18 375:12 375:12 377:1 378:22 382:12 383:21 386:12 386:13 389:1 389:21 399:3,4 438:2 440:15 467:16
<b>J</b>				
<b>j</b> 72:12,12,17,17 74:9,9,12,12 74:14 75:6,6 76:16,16 79:21 79:21 80:10,10 81:4,4 123:14 135:9,9,11,11 135:13,13,21 135:21,23,23				



135:24,24	373:24,24	374:11 415:9	419:16 420:1	98:21 99:4,8
146:13,13,15	375:7,7,22,23	420:12	420:10,20	104:22 107:6,8
146:15,22,22	377:15,21	<b>jury</b> 456:14	421:12 422:3	108:17,18,20
378:13,18	420:14,15	<b>K</b>	422:12 423:1	109:10,24
379:10,10	447:17,17	<b>k</b> 1:13 3:16 5:1,6	424:1,9,22	110:7,8 113:14
447:20,20	459:21,22	6:1 7:1 8:1 9:8	425:5,16	113:16 114:9
448:1,1,3	468:14,14	485:4 486:12	426:23 427:9	114:11,17
449:4	474:1,1 485:3	<b>kang</b> 17:8,16,22	427:14,18	115:3,4,8
<b>january</b> 1:9 5:2	485:17	18:8 19:1,9,10	428:1,18	119:8 127:24
6:2 7:2 8:2 9:4	<b>johnsons</b> 114:24	20:5	429:13,16	133:10 135:7
12:12 31:11	123:22 124:2	<b>katherine</b> 3:7,7	431:3,8,13,18	136:1,8,14
35:22 37:3	124:11 129:2	<b>keep</b> 46:5 60:13	432:16 433:19	137:11 138:21
38:5 41:22	129:19 130:1	95:23 165:12	435:1,13 436:1	140:4,7,12,14
44:7 49:19	130:13 142:15	216:1 260:16	436:9 437:8	156:17 161:17
52:22 53:16,20	142:18 143:6	300:15 460:19	438:7,14 439:3	164:1 165:12
479:14 485:19	144:8 145:7	478:13 480:20	439:12,20	165:22 166:17
<b>jersey</b> 1:1 2:20	147:19 149:12	<b>keeping</b> 53:12	440:17 441:20	166:18 167:4
3:17	150:21 151:4,9	<b>kellert</b> 3:2,3	443:7,19,23	168:1 170:14
<b>jewish</b> 356:8	171:16 174:24	<b>kemble</b> 3:17	444:7 445:8,13	174:5,18
<b>job</b> 461:2	175:13 180:8	<b>kept</b> 366:4	454:13 455:5	175:18 176:7
<b>john</b> 112:21,23	377:16,22	<b>kids</b> 387:15	455:20 457:12	177:17 180:13
113:20 114:3,7	<b>journal</b> 34:18,22	<b>kind</b> 28:15	461:13 470:18	180:24 181:2,8
114:22	106:12,14,14	34:13 43:19	470:21 472:18	181:9 182:24
<b>johnson</b> 1:2,3,17	360:12,13,13	113:15 169:11	473:10 474:9	183:9,15,17
2:21,21 3:5,5,9	360:14 386:19	185:17 186:11	474:23 475:6	184:9,11,11
3:9 9:17,17	390:1 397:2,9	358:16,16	475:17,24	187:6 188:22
75:18,18 76:5	398:8,11,13	<b>klatt</b> 3:11 5:8,11	476:10 477:9	190:1,2,11,13
76:5 78:14,15	<b>journals</b> 35:3	388:7,16,19	477:15 479:1	190:19 191:10
114:23 123:22	360:6,10	390:11,20	479:18 481:2	193:2 195:22
144:2,2,7,9,9	398:16 399:4	392:10 394:2	482:4 483:20	196:8 197:22
144:11,12,23	<b>js</b> 74:14 123:14	394:15 395:14	<b>knew</b> 45:9,12,21	200:1,2,19
144:23 145:3,3	378:13,18	396:8,15 397:1	51:6 58:22	202:2,4 205:22
145:11,11,12	448:3 449:4	397:6,22 398:6	62:5 201:8	206:5,11 207:6
145:13,15,16	<b>judge</b> 86:8,15	398:21 399:21	425:15	208:21 210:23
145:20,20	87:8 299:23	401:10 402:13	<b>know</b> 10:24 11:8	211:6 212:16
146:5,8,9,19	300:4 401:19	402:19 403:1	22:9 23:21	220:1 223:15
146:19 147:7,7	420:13 435:14	403:10 404:23	31:16 33:20	223:19 239:22
147:11,12,15	456:15	405:18 406:4,9	34:2,5 35:2,7	241:17 244:19
147:15,19	<b>judges</b> 401:20	409:5,14 410:1	43:4,19,23,24	247:4 257:17
148:2,3,3,5,5	<b>judith</b> 1:13 5:1,6	410:20 411:14	44:1,1 45:6	257:18,24
148:17,17	6:1,5,15 7:1	412:6,22 413:4	47:2,4 65:4	262:9 279:23
149:4,4,11	8:1 9:8 38:4	413:10,16,23	69:20 76:1,4	282:24 286:5
150:2,2,3,3,8,8	485:4 486:12	414:17 415:7	77:1 78:6	292:7 296:21
150:15,15,21	<b>judy</b> 8:18 9:3	415:20 416:10	82:24 83:12	297:7,23 305:3
151:4,9 171:16	351:2,5 484:3	417:7,18 418:3	85:12 86:21	313:4 316:10
174:24 175:12	<b>julie</b> 373:11,13	418:13,21	88:17 91:2,4	317:1,6 318:4
180:8 372:2,2	373:14,21		91:22 94:17	318:16,24

321:2 322:6 323:3 324:7,22 324:24 325:4,7 325:16 326:4 326:12,15,20 326:21 327:2 334:1,2 337:3 344:16,17 346:16 348:10 354:5 358:19 363:13 365:14 365:17,18 368:2 376:7 377:1,12 378:21 379:3,4 380:18 386:14 386:15,19,24 389:22 390:4,8 390:14,22,23 390:24 393:18 395:19 396:6 396:19 397:17 397:24 398:10 398:12 400:6 405:8 410:21 411:21 412:8 412:23 413:18 416:4 417:24 418:1,18,20 419:14,21 420:2,8 421:5 421:13 423:21 427:20 432:14 432:19 433:3 433:23 434:2 435:12,15 436:2 439:18 442:15 454:2 456:17 466:4 467:5,14,17 468:2 471:15 472:13 475:9 475:18,23 476:2,8 479:4 480:3,8 481:20 <b>knowing</b> 109:19 169:7 175:8	459:2 <b>knowledge</b> 20:21 33:23 43:13,15,16,18 228:9 235:17 253:24 <b>known</b> 25:6 115:15 171:19 173:14 195:1 195:13 376:4 401:4,8 404:11 404:18 457:19 458:13 477:16 <b>knows</b> 42:20 43:21 <b>kramer</b> 207:15 <b>krebs</b> 433:24 434:3 <hr/> <b>L</b> <hr/> <b>l</b> 2:8 <b>lab</b> 220:20 <b>lack</b> 99:19 101:14 255:16 255:19,21 256:23 257:1 259:15,18 261:14 266:5 267:22 <b>lacking</b> 329:13 <b>lag</b> 280:4 325:17 325:17 <b>langer</b> 120:4,8 121:10,20 122:2,11 123:13 130:12 <b>langers</b> 120:11 122:7 123:19 <b>langseth</b> 158:14 <b>language</b> 98:14 102:13,14,15 104:3,6,9 399:20 <b>large</b> 113:15 151:14 177:18 185:7 188:9 204:24 205:4	237:11 266:8 266:23 <b>larger</b> 69:4 197:15 297:17 387:11 414:9 414:19 426:15 426:18 <b>late</b> 45:15 <b>latency</b> 316:13 317:20 325:24 326:16,20 327:17 328:11 <b>latest</b> 282:20 <b>laughing</b> 136:7 <b>law</b> 10:21 43:19 83:20,20,21 <b>lawsuit</b> 88:22 305:12 313:13 <b>lawsuits</b> 302:13 303:7 304:2,17 304:18 305:22 309:9 311:15 311:24 <b>lawyer</b> 24:3 52:19 125:11 465:1 <b>lawyers</b> 5:18 39:15 49:24 50:5,10 57:3 57:14 58:11 59:23 60:4,17 61:7,18 62:1 62:12 67:21,23 72:21 75:1 78:1,3 80:11 80:15,19 81:3 81:24 82:5 84:3 85:13 86:11,22 87:5 91:19 93:15 94:10 95:24 96:6 114:6,8 118:14 121:8 137:5 207:16 219:20 358:6 358:20 362:14 386:8 414:12	414:16 415:3,6 436:24 488:1 <b>lay</b> 352:17 <b>lead</b> 20:3 22:13 25:3 26:1,9 29:24 90:15 119:18 175:1 177:3,11 183:12 207:1 217:15,18 218:5 219:15 <b>leading</b> 22:6 270:20 271:7 <b>leads</b> 20:18 23:9 145:14 179:5 183:22 188:7 212:10 218:20 223:4 312:10 376:11 380:19 381:21 408:18 408:21 <b>leadup</b> 231:13 <b>learn</b> 60:21 100:18 <b>learning</b> 43:11 67:15 <b>leave</b> 123:9 479:5 <b>leaves</b> 406:14 <b>leaving</b> 50:24 <b>led</b> 23:3 50:24 51:12 <b>left</b> 48:15,17,18 49:19,20 244:22,23 246:11 419:12 443:21 444:21 468:4,24 478:24 483:5 <b>lefthand</b> 253:12 <b>leigh</b> 2:2,3 <b>length</b> 102:24 103:1 108:15 265:22 290:14 <b>lens</b> 338:12 <b>lesion</b> 326:13 <b>letter</b> 7:14	230:13,17,18 230:23 231:4,7 231:9,11,14,20 232:8 233:22 233:24 236:13 362:8 389:10 392:1 393:6,15 393:20 <b>letters</b> 72:12 <b>level</b> 168:22 184:11,12 473:12 <b>levels</b> 183:11 419:4,19 420:7 421:14 422:6,8 422:16 433:7 434:12 435:15 437:12 <b>lhg</b> 1:5 <b>liability</b> 1:4 <b>license</b> 49:13 <b>licensed</b> 49:8 <b>licenses</b> 49:10 <b>life</b> 474:19 <b>lifestyle</b> 447:8 <b>lifetime</b> 171:11 473:5,8 <b>ligation</b> 197:24 202:22 <b>light</b> 110:14 116:14 133:8 <b>limit</b> 262:24 263:1 <b>limitations</b> 101:19 109:14 109:19 266:3 266:23 289:1 290:13 291:20 328:22 334:14 334:15 367:21 368:1 <b>limited</b> 99:19 101:14 103:17 106:24 255:16 256:22 257:1,2 257:3 259:15 261:14 267:21
---	--	---	---	---

285:14 448:19	20:21 22:17	357:21,24	483:20	144:3 156:17
<b>limits</b> 369:9	23:2,7,16	358:22 359:3	<b>longer</b> 16:24	158:24 172:10
<b>line</b> 119:16	25:23 26:13	386:9 389:13	17:15 49:12,16	175:17,20
121:16 487:3	27:22 34:12,21	390:5 395:5	219:12 243:9	196:23 198:2,7
488:3	56:18,22 57:10	397:15,19	244:3 326:24	198:9 202:14
<b>linear</b> 332:16,19	57:20,21 58:6	446:20	331:12	203:3 210:5,20
<b>lines</b> 220:14	58:19 59:8,13	<b>little</b> 10:14	<b>longo</b> 112:16	211:22 212:18
223:20 277:18	59:19 60:10,15	24:22 25:22	125:14 126:7	212:19,20
382:16,17	60:16,20 61:1	26:11 37:1	126:15 128:14	213:5 215:20
479:24	61:5,15,20	44:19 45:9,14	129:13 135:6	217:9 219:1,4
<b>lining</b> 439:23	62:5,7,11	58:17 130:16	140:22 142:22	223:6,18 224:9
<b>link</b> 237:18	104:24 105:1	146:21 212:19	373:19,21	240:22 244:21
423:13 428:12	106:7 109:8	348:12 362:14	379:2 380:2	245:13 246:15
<b>linking</b> 165:5	110:10 155:15	385:22 443:21	452:11,13,22	247:5 248:12
<b>list</b> 36:17 41:16	156:3 158:11	477:18 480:1	453:16,18	251:19 252:15
68:9 69:1	158:12 162:15	<b>live</b> 188:22	459:21 460:4	256:16 257:8
70:12 73:1	162:23 163:8	190:1	463:11,15	257:15 268:23
76:22 79:11,13	168:20 169:14	<b>lived</b> 44:1 190:3	464:10	272:14 273:3
84:24 93:20,23	174:22 175:5	318:19	<b>longos</b> 127:13	273:10 278:10
116:3 142:12	177:3 187:17	<b>livenote</b> 485:18	131:22 135:3	279:23 289:19
173:12,17	188:19 206:19	<b>lives</b> 42:14	136:4,18 137:6	289:24 291:12
174:1,6,14,17	208:2 219:1,3	<b>living</b> 42:21	137:11,16,20	291:15 293:16
176:1 177:8	219:11 229:2	423:3,7	138:22 139:18	295:23 297:16
179:13 273:16	229:15 234:8	<b>llp</b> 2:13,18 3:2,6	172:15 374:7	297:19 298:21
273:19,24	234:11 235:8	3:11,15,20 4:2	459:5,15	306:1 308:20
356:12,15	243:14 244:11	<b>lobby</b> 42:17	463:19 464:5	313:2,17 314:3
362:4 371:24	255:11 278:9	<b>location</b> 46:14	<b>longterm</b> 243:23	314:6 319:8,9
404:2 414:22	279:18,22	51:17	408:13 411:7	329:16 330:8
417:5 432:13	280:6 282:20	<b>locations</b> 46:19	411:22 412:9	330:24 332:1
435:10 447:5	283:1,4 285:21	49:2	472:5	333:3 340:16
467:1	285:24 286:4,9	<b>locum</b> 46:3	<b>look</b> 13:9 16:19	341:10,15
<b>listed</b> 69:14 70:3	289:7 337:7	<b>logan</b> 3:8	17:2 18:18	346:18,22
70:21 74:10	348:20,22	<b>logical</b> 389:5	19:18 21:2	370:7,16,19
77:8 78:4	349:11,16,19	<b>long</b> 10:13 44:2	24:4 28:17,23	371:6 391:4
81:15 175:24	349:22,23	128:24 155:3	32:9 35:24	401:2,16
276:10 355:2	350:1 357:7	181:11 188:22	38:15,16 72:10	404:13 414:18
372:17 376:18	361:16,18	188:24 190:2,3	75:23 77:19	415:19 423:18
377:1,6 385:13	362:11 382:7	218:11 255:4	78:18 79:11	424:16 425:9
396:1,2,10	412:12 456:1	267:2 291:23	99:13,14 101:5	425:17 435:10
405:1 414:22	<b>litigation</b> 1:5 4:8	317:8,23 318:4	101:18,22	439:8 443:23
436:15 444:14	45:12 49:24	318:6 322:20	103:9 105:9	445:5 473:1
<b>listen</b> 149:10	50:5,11 57:4	324:13 325:20	108:15 111:8,9	<b>looked</b> 27:23
<b>lists</b> 70:15 75:22	57:15 58:12	326:8,12	112:4,6 119:6	31:18 58:19
75:23 245:7	75:8 93:16	327:24 379:4,6	119:11 126:24	71:3,6,9 75:12
382:20 450:7	125:11,22	422:7,15	127:22 129:14	76:17 77:2
<b>literature</b> 13:12	131:22 138:22	432:13 477:16	133:7,11,15	137:1 152:11
14:4,5,7 20:7	207:17 235:22	478:15 481:12	135:9 141:23	156:10,13

168:2 196:7	302:19 303:9	<b>lymphocytes</b>	35:11,16,18,20	454:21 482:22
197:7 199:3,9	304:23 305:2	406:23	36:4 236:18	<b>markers</b> 338:20
200:17 210:21	319:23 330:21	<b>lynch</b> 337:13	391:5 394:11	<b>market</b> 28:5,10
211:23 212:18	330:22 338:11		<b>manuscripts</b>	144:6
212:22 214:12	338:14 339:22	<b>M</b>	6:11	<b>marketed</b> 449:1
214:19 215:14	343:8 368:9	<b>m</b> 1:13,16 2:3,18	<b>marathon</b> 11:7	<b>marketing</b> 1:3
216:5,17	378:24 380:12	3:20 5:1,6 6:1	<b>margaret</b> 2:3,4	<b>marking</b> 128:18
217:10 222:22	392:13 393:4	7:1 8:1 9:5,8	42:2,4,5	<b>marks</b> 139:10
223:2,7,8	394:10 401:17	89:18,19,20,22	477:17 481:8	252:24 378:7
237:12 238:10	424:18,24	139:7,8,9,12	481:17	<b>mass</b> 352:19
247:21,23	425:19 427:2	213:12,13,14	<b>mark</b> 3:16 12:4	<b>material</b> 68:10
248:13,18	458:19 469:3	213:16 252:21	12:6 31:7	69:2,10,24
249:14,18	472:10 479:23	252:22,23	35:12 52:20	92:4 192:7
254:17 256:7	479:24	253:2 315:7,8	66:11 156:22	415:23 451:8
276:17 281:14	<b>looks</b> 36:24	315:9,11 378:4	198:15 211:1	<b>materials</b> 68:6
305:6 306:7	38:18 39:17	378:5,6,9	213:9 238:21	70:2,5 72:3
313:2 318:3	258:3	388:10,11,12	239:21 244:24	76:22 83:13
336:9 366:12	<b>loop</b> 67:17 354:9	388:14 444:2,3	247:14 294:7	84:21 85:20,24
366:15 369:10	<b>losing</b> 344:3	444:4,6 445:18	319:16 320:10	86:19 87:16
387:23 405:5	<b>lot</b> 21:3 146:22	445:19,20,22	350:19 424:13	91:12,15,20,23
423:22 434:23	185:11,13	461:17,18,19	425:4 427:16	92:2,8,18,20
436:7 439:4	293:8 300:23	461:21 484:5,7	427:17,18	93:7 106:11
455:1 458:15	305:12,21	485:5 486:12	483:17	137:2 158:13
468:9 470:3	334:11 344:1	<b>macro</b> 406:23	<b>marked</b> 6:3 7:3	192:2,4 312:14
<b>looking</b> 12:21	347:7 354:6	<b>magnani</b> 158:15	8:3 11:12,15	374:4 414:5
14:3,6 18:10	363:5,10 389:2	<b>main</b> 3:21	12:8 31:12,16	446:14 482:20
18:13,23 19:1	<b>lots</b> 43:2 399:4	<b>maintain</b> 71:11	35:13,19 36:4	<b>matter</b> 39:21
19:5,14,16	439:13	<b>majority</b> 144:8	36:18 52:23	58:4 131:5
21:8 24:16	<b>low</b> 259:8 328:4	145:10 146:7	66:13,19 67:19	150:16 151:2
51:6 52:13	328:4	146:12 148:1	67:20 96:16	151:12 168:5
73:1 78:22	<b>lower</b> 8:11	253:14 291:16	97:5,17 100:22	169:24 170:4,7
81:10 100:7	262:24 292:10	321:14 440:2	101:2 128:15	171:3 298:21
101:23 102:6	295:3 296:24	470:9	141:11 157:1	<b>matters</b> 453:23
102:24 106:7	298:2 369:9	<b>makeup</b> 108:22	157:18 158:1	<b>mcbeth</b> 3:7,7
106:10 116:14	<b>lowest</b> 227:13	181:13 290:3	198:21 213:17	<b>mccullough</b>
117:15 118:19	292:21 294:22	<b>making</b> 73:4	213:21 224:14	17:18 18:1
129:12 136:22	295:16 383:17	256:21 266:5	224:15 232:19	<b>md</b> 6:15,16 7:9
142:3 152:23	<b>lunch</b> 213:8,23	389:19 407:1	233:1 238:22	33:14 48:11,12
153:2,8 161:8	<b>lung</b> 160:19	<b>malignant</b>	245:2 247:16	48:13,16,17,18
169:3 173:13	184:19,21	185:12,15	269:19 272:2,6	156:2 444:21
199:16 208:7	344:1 457:5	186:8	294:13,16	<b>mdl</b> 1:7 6:12
212:17 218:6	<b>luzenac</b> 471:16	<b>management</b>	302:8 319:12	13:17 14:20
218:12,15,17	471:24	186:8	330:18 350:20	32:20 65:15
220:3 241:9	<b>lymph</b> 206:21	<b>manges</b> 2:18 3:2	353:20,24	415:10 452:11
248:10 261:18	206:22,23	<b>mansukhani</b>	392:6 394:5,11	<b>mean</b> 21:6 22:23
264:6 270:8	207:1 209:3	3:11	425:6,8 427:3	29:5 37:17
294:6 296:4	<b>lymphatic</b> 457:3	<b>manuscript</b>	427:22 428:2	38:16 40:18

51:9 71:13 92:11 97:6,21 102:23 104:5 117:14 130:18 132:23 135:11 137:9 170:2 196:21 200:15 203:15 206:24 222:6 269:9 298:7 339:1 359:4 373:2 393:23 418:1 447:15 448:16 459:16 472:21 <b>meaning</b> 104:10 119:8 133:7 261:1 <b>means</b> 21:7 74:3 133:6 284:21 334:20 413:6 419:18 420:2 474:24 <b>meant</b> 84:8 239:16 352:21 379:24 459:19 478:23 <b>measured</b> 189:13 219:7 <b>mechanism</b> 102:5 220:5,8 220:8 226:4 367:24 380:8 385:5 <b>mechanistic</b> 225:2 227:14 451:10 <b>media</b> 305:22 311:14 313:13 462:19 <b>medical</b> 20:7 22:17 23:2 34:12,18,21 35:3 38:4 43:1 73:5 104:24 116:13 133:14 133:21 155:23 195:7 221:8,11	363:2 400:12 412:8 462:9 473:15 <b>medicine</b> 6:7 12:19 13:18 31:23 33:9,14 46:3,7 47:13 49:9 106:4 366:22 <b>medium</b> 151:14 <b>meet</b> 42:12 44:9 67:6 278:21 <b>meeting</b> 36:12 42:2 279:4 364:11 <b>member</b> 360:17 360:19 <b>members</b> 278:20 279:4 <b>membrane</b> 457:2 <b>memorial</b> 46:12 <b>memory</b> 121:2 <b>men</b> 318:24 <b>menarche</b> 316:5 316:8 <b>menstrual</b> 192:9 <b>menstruation</b> 228:12 440:12 <b>mention</b> 216:4 <b>mentioned</b> 43:8 246:16 302:4 401:22 438:4 451:14 <b>mesothelial</b> 189:6 <b>mesothelioma</b> 186:20 187:5 338:22 339:8 339:13,19,23 342:10,14,20 343:4,16 344:11 345:10 345:24 346:9 346:14,16,24 347:5,12,19,24 410:22	<b>met</b> 42:17 463:14 477:18 <b>metaanalyses</b> 250:10 251:6 251:20 253:7 260:8 265:7 370:20 451:10 <b>metaanalysis</b> 7:23 8:5 99:16 197:16 235:2 236:5,10 238:2 238:3 242:10 245:9 247:8,14 250:18 251:2,3 252:11 258:17 259:1,5,7 260:21 261:3,8 264:2,7 265:3 265:8 283:10 283:11 287:10 291:11 329:23 383:11,23 470:8 <b>metal</b> 170:3 373:3,6 400:3 432:9 <b>metals</b> 6:19 8:19 111:2 162:6 164:16 168:6 179:2 372:9 373:9,18,23 375:21 377:15 378:15,23 401:6 432:5 465:11 466:9 <b>method</b> 105:18 115:9,15 312:3 419:5,9,20 420:6,8 <b>methodologies</b> 418:5 <b>methodology</b> 13:15 14:16 80:18 81:21 105:19,24 126:13 137:19 146:11 152:4	223:9 227:24 234:6 251:15 268:8 278:1 279:17 294:19 297:12 299:2 313:9,11,17 367:3,4 451:19 452:1 <b>methods</b> 31:24 32:3 106:11 115:11 116:4 116:20,23 132:13 137:2 246:17 312:6,7 312:14 314:4 418:7 <b>michael</b> 3:11 111:5 <b>micheal</b> 1:16 23:20 485:3,17 <b>microscope</b> 133:19 218:7 419:13 451:20 <b>microscopes</b> 133:24 <b>microscopist</b> 116:5,9 133:1 133:5,10 <b>microscopy</b> 116:14,15 133:8 <b>mid</b> 316:18 <b>middle</b> 318:18 321:3 358:18 <b>middleage</b> 316:19 <b>migrate</b> 191:1 191:24 192:2,5 192:13,22 208:16 214:8 221:7 228:18 229:6 230:2,7 232:6 387:17 <b>migration</b> 192:19 193:13 194:16 201:18 202:20 204:5	207:1 221:10 221:18 223:12 223:21,23 226:14 227:6 227:22 228:13 228:15 336:16 387:3 <b>mike</b> 388:19 424:21 429:12 472:17 <b>miller</b> 341:22 <b>millers</b> 340:5 341:6 342:5 343:16 345:18 456:13 <b>mind</b> 15:8 20:10 109:21 129:5 168:12 287:3 324:21 336:24 360:7 397:3 460:22 464:14 <b>mine</b> 94:4 416:2 423:8 <b>mineral</b> 117:19 <b>minerals</b> 115:17 116:16 471:24 <b>miners</b> 340:5 341:5,22 342:5 343:16 345:18 456:13 <b>mines</b> 130:3 135:22 343:24 379:10 423:4,8 <b>minimal</b> 251:22 <b>mining</b> 79:17 388:22 <b>minnesota</b> 49:17 <b>minus</b> 167:8 <b>minute</b> 23:19 236:2 370:23 389:8 475:9,11 <b>minutes</b> 65:23 79:7 134:3 210:14,16 471:3 <b>mischaracteri...</b> 76:19
--	--	---	--	--



<b>misheard</b> 296:10	427:10 428:6 431:5,21	167:17 182:8 184:3 191:7	277:23 278:4,5 279:1,19 280:2	390:2 464:15
<b>mismarked</b> 225:7	454:20,21 455:13,17	199:9,10,11 223:20 228:11	281:19 282:16 363:1,10,18	<b>needing</b> 259:20 <b>needs</b> 120:22
<b>misrepresenting</b> 132:22	457:10,10 469:9,15 476:2	290:13 298:16 343:22 387:10	364:20 365:16 449:11	336:24 <b>negate</b> 208:14
<b>misrepresents</b> 132:17 403:22	476:12,17 <b>monographs</b> 6:8	391:14 402:7 403:7 437:12	<b>nature</b> 328:23 435:24	242:6,14 246:13
<b>missing</b> 88:1 296:18 332:12	6:20 7:11 8:20 31:9,19 33:11	442:23 458:12 <b>multiply</b> 358:22	<b>nci</b> 234:22 272:15 278:20	<b>negative</b> 261:7 <b>neglected</b> 65:24
332:12 343:12	<b>montgomery</b> 2:5	<b>multistep</b> 387:21	282:18 283:6 302:4 365:7	<b>neighbors</b> 42:13 <b>neither</b> 361:5
<b>misspoke</b> 67:9 239:16 459:13	<b>month</b> 49:7 279:24 283:7	<b>multivitamins</b> 432:18,20	366:3 450:11 <b>ncis</b> 272:7	485:11,12 <b>network</b> 51:20
<b>misstates</b> 35:5 57:8 77:12	439:23 479:2 <b>monthly</b> 190:18	435:7,11 <b>museum</b> 135:13	<b>ncisponsored</b> 234:19	52:3,15 <b>never</b> 34:3
121:13 122:23 123:17 130:15	278:21 279:5 <b>months</b> 332:11	<b>musser</b> 7:15 <b>mutation</b> 337:12	<b>ncra</b> 485:17,18 <b>near</b> 206:22	133:18 171:18 176:14 177:14
135:15 139:1 147:2 236:21	332:13 479:8 <b>morning</b> 9:14,15	337:14 <b>mutations</b>	423:8 441:15 441:19	185:20 326:10 368:2 386:12
366:7 402:4,18 468:20	52:20 67:22 90:4 172:2,10	380:22 381:5 381:10,17	<b>nearly</b> 10:2 59:22	386:13 387:6 389:21 408:1
<b>mit</b> 130:2 <b>mix</b> 21:4 70:7	<b>morris</b> 480:10 480:11,14	382:1 <b>mystery</b> 350:11	<b>necessarily</b> 187:6 192:19	431:23 433:9 434:15 435:18
110:24 111:1 <b>mklatt</b> 3:12	<b>morristown</b> 3:17	351:23 <hr/>	211:21 229:4 338:15 354:10	438:2 462:12 462:17,23
<b>model</b> 410:18 <b>models</b> 182:1	<b>mortality</b> 159:6 426:4	<b>N</b> <hr/>	389:4 477:6 481:20	477:20 482:1 <b>new</b> 1:1 2:20 3:4
410:21 411:1 <b>moderate</b> 226:9	<b>motion</b> 348:21 <b>mount</b> 3:17	<b>n</b> 2:1 3:1 4:1,3 <b>naeem</b> 3:20,21	<b>necessary</b> 457:24 483:16	3:4,17 51:14 69:9 236:8,15
<b>modification</b> 306:11,24	120:8 <b>move</b> 19:8,8	<b>naive</b> 59:14 <b>name</b> 9:16 16:19	<b>need</b> 11:8 49:4 80:5,6 86:7,9	288:7 <b>newer</b> 197:15
307:21 308:10 314:20	78:2 149:15 203:10 299:11	42:14 46:13 51:19 97:12	86:12,16 112:5 121:1 122:19	199:5 <b>newest</b> 451:4
<b>moment</b> 122:22 <b>monday</b> 1:9	300:22 301:1 <b>moved</b> 318:20	245:7 351:22 354:2 388:19	122:20 128:24 198:6 202:14	<b>newport</b> 2:10 <b>news</b> 55:3,5
<b>money</b> 51:14 358:20 386:7	<b>moving</b> 65:17 216:1 441:2	410:6,10,11 <b>names</b> 94:2	230:16 231:20 245:7 252:17	56:12 64:17 65:10
395:22 396:7,7 396:11 398:4	<b>msilver</b> 3:16 <b>mucinous</b>	<b>narod</b> 256:6 <b>narods</b> 259:20	300:22 303:16 313:7 319:7,9	<b>nicely</b> 286:9 <b>nickel</b> 111:3
<b>monograph</b> 31:9 156:22	241:18 <b>mud</b> 119:17	371:10 <b>national</b> 270:13	362:4 378:2 386:14 423:18	164:17 168:7 372:10 400:5
157:6,11 165:4 187:19 224:23	<b>multipage</b> 468:5 <b>multiple</b> 19:20	270:19 271:2,6 271:13,17,21	424:19 426:22 450:4,5	400:16 404:6 431:24 435:2,6
225:22 423:19 423:21 424:11	21:20 106:15 148:23,23,24	272:19 273:6 273:11,22	<b>needed</b> 109:3 168:12 185:19	435:16 <b>nine</b> 269:12
424:11 425:20 426:10 427:8	166:20 167:11	274:4,14 275:1 276:4,13 277:5	325:8 371:17	<b>nodes</b> 206:21,22 206:23 207:2



209:3	416:2 426:1	252:3 257:7	125:12,24	230:10 232:13
<b>nods</b> 200:24	428:20 486:7	265:14 266:13	126:9,17 127:8	233:3,18 236:1
310:11	<b>notes</b> 5:18 68:20	267:3 321:3,10	128:7 130:5,14	236:3,19,20
<b>nonasbestiform</b>	71:24 72:2,5	321:11,16	131:15,23	237:20 242:2
115:17 117:18	443:24 478:13	322:22 323:13	132:15 133:2	243:21 244:6
118:1 225:22	480:20 488:1	<b>nutrient</b> 433:4	134:6,19	244:15 245:23
284:8,11	<b>notice</b> 1:14 6:4	<b>nutrition</b> 432:9	135:14 136:10	247:2 248:5
285:13 340:11	11:13 12:3	432:12	136:20 137:13	249:7 251:17
341:5 469:10	65:18 66:3	<b>nuts</b> 435:3	138:12,24	252:5,13
469:15	67:19		140:10,18	254:10 261:4
<b>nongenetic</b> 8:12	<b>november</b> 36:3	<b>O</b>	144:24 145:21	261:15 264:4
<b>nongenital</b>	93:11 94:21	<b>o</b> 4:6	147:1,22	264:18 265:18
302:22	95:6 96:17	<b>oath</b> 10:19 24:6	149:18 150:5	266:19 270:23
<b>nonhereditary</b>	351:2,8 352:3	<b>obesity</b> 356:20	150:22 151:10	272:22 274:19
356:16	352:8	<b>object</b> 13:5 18:6	151:21 152:17	275:9 276:8
<b>nonhispanic</b>	<b>ntp</b> 384:7,11,24	20:11 21:15	156:7 158:20	277:2 279:8
8:11 296:13	385:8,11	22:7,20 23:5	159:9,14 160:3	280:14,22
<b>nonoccupatio...</b>	<b>number</b> 6:3 7:3	23:18 26:2,17	161:2 163:6,17	281:11 282:22
163:15,21	8:3 12:2 47:4	27:12 28:20	164:11 165:8	284:13 285:5
423:3	55:16,17 59:21	29:8 30:5,18	166:1 167:14	285:16 286:14
<b>nonserous</b>	63:12,16 67:20	33:4 35:4 36:8	167:22 168:24	288:11,22
238:14 239:24	72:11 79:12,13	55:13 57:7,17	169:18 170:17	289:22 290:10
240:13 241:20	96:2 116:3,19	58:13 60:7,18	172:3 173:5,19	291:18 295:19
241:23 242:10	152:11 187:4	62:14 63:3	174:3 175:3,15	297:2 301:22
<b>nonspecific</b>	193:17 199:16	64:4 65:1,16	176:12 177:12	302:14 303:14
45:16	202:7 238:8	66:20 67:4	178:4,17 179:7	304:6 305:15
<b>nonstatistically</b>	254:23 293:1	73:7,13,20	179:14 180:10	305:23 306:13
164:7 165:2	304:19 310:12	74:5,19 75:9	181:5 182:2	307:4,23
324:8	331:20 351:13	77:11,14 78:16	183:24 186:5	308:12 309:2
<b>nontalc</b> 436:18	355:13 368:16	80:12,21 81:7	186:21 187:7	309:13 310:14
<b>nontalcbased</b>	368:20 427:20	81:17 82:8	187:18 188:16	312:21 314:12
438:17	448:21 451:17	88:23 94:23	189:9,19 191:3	314:23 316:2
<b>nopevicmass</b>	452:15 456:11	95:9 96:20	191:16 192:24	317:4,24 322:4
351:15	457:22 462:8	97:18 98:16	196:1,11,19	322:15 323:5
<b>normal</b> 73:2	<b>numbers</b> 78:21	100:24 101:16	197:11 201:6	323:11,20
227:11	297:19 449:24	102:2 103:6,19	201:19 204:1	324:15 325:9
<b>north</b> 318:19	450:2	104:12 105:14	204:19 205:7	327:11 328:14
<b>northwest</b> 46:12	<b>numerous</b> 91:11	107:2 108:3,12	205:14 206:9	329:14 331:15
<b>notary</b> 1:18 9:10	92:17 172:6	109:5,16	207:21 209:23	332:6 333:10
486:19	468:9	110:22 111:20	211:10,18	333:15 334:23
<b>notations</b>	<b>nurse</b> 42:16	115:1,20 116:6	214:16 215:6	335:9,20
483:22	348:7,9	117:1 118:3,17	216:15,24	336:14 338:7
<b>note</b> 40:10 91:9	<b>nurses</b> 236:23	119:10,21	218:1,23	339:9 340:13
253:13	237:16 242:12	120:13 121:12	220:11 222:1,8	341:13,24
<b>notebooks</b> 68:5	243:6 245:21	122:3,21,22	222:16 223:13	342:11,22
<b>noted</b> 159:2	246:10,24	123:9,16 124:4	224:7 226:15	343:18 345:11
188:1 258:24	247:13 249:4	124:13,24	228:4 229:20	346:1 347:20

349:13 350:14	460:23 463:3	<b>occasional</b>	44:15 50:12	132:5,15 133:2
353:6 357:4	463:21 464:18	417:21 418:8	52:5,16,19	134:6,19
362:21 363:22	465:13,23	<b>occasionally</b>	53:22 55:13	135:14,18
364:8,22	466:12,21	272:17	57:7,17 58:13	136:10,20
365:10 366:6	468:19 469:17	<b>occupational</b>	60:7,18 62:14	137:13,23
366:19 367:6	470:12 475:2	155:19 156:6	63:3 64:4 65:1	138:3,12,24
367:16 368:7	<b>objected</b> 300:5	156:14 158:19	65:16,22 66:20	140:10,18
368:23 369:12	<b>objecting</b> 346:4	159:7,19	67:4 68:4 73:7	143:13,16
370:12 372:4	<b>objection</b> 76:8	160:17 161:1,9	73:13,20 74:5	144:24 145:21
374:16 376:1	76:18 78:7	161:13,20	74:19 75:9	147:1,22
376:20 377:8,9	79:24 82:16	162:17 163:2	76:8,18 77:11	148:20 149:14
377:17 381:18	95:13 107:15	165:7 346:19	77:14 78:7,16	150:5,22
382:9,23	110:5 137:23	346:20 423:15	79:2,5,24	151:10,21
383:19 384:18	148:20 154:2	426:5 428:14	80:12,21 81:7	152:17 154:2
385:9 386:10	156:15 161:23	429:1 430:18	81:17 82:7,10	156:7,15 157:8
387:4,19 390:6	182:21 183:13	<b>occupationally</b>	82:15,18 83:8	157:15,20
390:18 391:20	194:13 267:18	158:22 162:8	83:21 84:1,15	158:20 159:9
395:8 396:4,12	268:11,20	<b>occur</b> 166:19	84:18 85:17	159:14 160:3
396:18 397:4	270:3 271:9	228:16 255:9	86:17 87:10,21	161:2,23 163:6
397:20 398:1	298:4,13 299:7	381:10 409:3	88:3,12,23	163:17 164:11
398:19 399:17	300:1,5,19	413:6	89:15 92:5,10	165:8 166:1
399:19,19	303:8 307:16	<b>occurred</b> 83:16	92:23 93:22	167:14,22
400:20 402:3	313:14 318:14	<b>occurs</b> 166:20	94:23 95:9	168:24 169:18
402:17,22	326:19 327:3	193:13 223:22	96:20 97:18	170:17 172:3
403:4,20,20,21	329:1 334:18	223:23 228:13	98:16 100:24	173:5,19 174:3
405:15,24	337:1 433:15	324:23 385:3	101:16 102:2	175:3,15
406:6 408:22	440:10 448:6	<b>october</b> 49:21	102:19 103:6	176:12 177:12
409:10,18	449:6 450:20	50:24 51:4,15	103:19 104:5	178:4,17 179:7
410:14 411:10	452:3,19 453:2	479:7,9	104:12 105:14	179:14 180:10
412:2,20,24	454:3 455:5,9	<b>odds</b> 262:24	107:2,15 108:3	181:5 182:2,21
413:7,14,19	455:19,20	263:11,15,19	108:12 109:5	183:13,24
414:13 415:4	456:20 457:12	307:15 311:1	109:16 110:5	186:5,21 187:7
415:17 416:9	458:8 459:17	313:24 355:6,6	110:22 111:20	187:18 188:16
417:3,15,23	460:1,7 463:7	368:10 369:14	112:8 115:1,20	189:9,19 191:3
418:11,15	474:5,20	<b>odell</b> 2:2,3 5:9	116:6 117:1	191:16 192:24
419:10,22	475:13,22	5:12 13:5 18:6	118:3,17	194:13 196:1
420:3,17 421:1	476:6 477:8,11	18:16 20:11	119:10,21	196:11,19
421:22 422:9	479:15	21:15 22:7,20	120:13,18,23	197:11 198:6
422:19 423:16	<b>objections</b> 66:5	23:5,18,23	121:12 122:3	200:9 201:6,19
428:16 430:23	66:7,9 67:23	24:8 26:2,17	122:14,17,20	202:13,23
431:6,10,16	<b>observational</b>	27:12 28:20	123:4,7,9,16	203:13 204:1
432:10 434:20	253:24	29:8 30:5,18	124:4,13,24	204:19 205:7
435:8,21 436:4	<b>observed</b> 308:2	33:4 35:4 36:8	125:12,24	205:14 206:9
437:4,21	<b>obtain</b> 289:13	37:10 38:22	126:9,17 127:8	207:21 209:23
438:20 439:6	406:3	39:4,7 40:8,10	128:7 129:4,8	210:8,12,15,24
439:16 441:17	<b>obvious</b> 218:13	40:20,23 41:8	130:5,14	211:10,18
442:21 445:3	<b>obviously</b> 350:8	41:14 43:23	131:15,23	213:10 214:2

214:16 215:6	303:14 304:6	387:19 390:6	460:3 461:4,10	43:20 44:11
216:6,15,24	305:15,23	390:18 391:20	463:3,21 464:8	45:2 46:24
218:1,23	306:13 307:4	392:2 393:23	464:18 465:13	48:20 50:3
220:11 222:1,8	307:16,23	395:8 396:4,12	465:23 466:12	51:19 52:16
222:16 223:13	308:12 309:2	396:18 397:4	466:21 468:17	53:19 54:2
224:7 225:4,8	309:13 310:14	397:20 398:1	468:19 469:17	61:21 63:8
226:15 228:4	312:21 313:14	398:19 399:17	470:12 471:2	66:24 68:12,23
229:20 230:10	314:12,23	400:20 402:3	472:17,19	69:11,17 70:1
230:16,19	316:2 317:4,24	402:17,22	474:5,20 475:2	71:17,21 75:17
231:2,6,10,15	318:14 319:7	403:4,17,19	475:13,22	87:24 89:15
231:18 232:13	319:17,19,21	405:15,24	476:6 477:8,11	90:10 92:6,16
233:3,18 236:1	320:2,6,13	406:6 408:22	478:19 479:15	92:23 93:1,13
236:19 237:20	322:4,15 323:5	409:10,18	480:23 482:6,9	93:18 94:7,12
238:17 240:3	323:11,20	410:14 411:10	482:14	94:20 95:4,22
242:2,24	324:15 325:9	412:2,20,24	<b>offered</b> 107:16	99:5,8,13
243:21 244:6	326:19 327:3	413:7,14,19	344:20,24	100:4 101:11
244:15 245:12	327:11 328:14	414:13 415:4	462:24 464:13	101:22 105:6
245:23 247:2	329:1,14	415:17 416:9	<b>offering</b> 128:4	113:2,9 114:9
248:5 249:7	330:20 331:15	417:3,15,23	134:16,21	117:22 120:10
251:17 252:5	332:6 333:10	418:11,15	278:18 453:8	121:18,23
252:13 253:17	333:15 334:18	419:10,22	453:12	125:19 127:5
254:10 260:1	334:23 335:9	420:3,17 421:1	<b>offhand</b> 178:8	127:12 131:12
260:14 261:4	335:20 336:14	421:22 422:9	191:12	131:21 134:2
261:15 264:4	337:1 338:7	422:19 423:16	<b>office</b> 37:13 39:9	134:16 135:6
264:18 265:18	339:9 340:13	424:5,14,17	40:24 47:5	137:18 140:7
266:19 267:17	340:22 341:13	425:3,9,14	71:15	143:4 144:20
268:11,20	341:24 342:11	426:16 427:4	<b>official</b> 49:21	149:8 154:13
269:6,13 270:3	342:22 343:18	427:12,15	<b>officials</b> 50:19	157:20 196:14
270:23 271:9	344:16 345:11	428:16 429:11	<b>offtheshelf</b>	196:14 200:6
272:22 274:19	346:1,5 347:20	429:15 430:23	471:4	201:3 203:19
275:9,15,22	349:1,13	431:6,10,16	<b>oh</b> 53:17 177:6	207:6 209:9
276:8 277:2	350:14 353:6	432:10 433:15	187:23 263:6	210:5,7,15,16
279:8 280:14	357:4 362:21	434:20 435:8	309:18 392:9	213:10 214:11
280:22 281:11	363:22 364:8	435:21 436:4	<b>ohio</b> 3:22	216:3 226:2,7
282:22 284:13	364:22 365:10	437:4,21	<b>okay</b> 9:19,20	226:12,23
285:5,16	366:6,19 367:6	438:11,20	10:8,11,15,23	227:3 229:24
286:14 287:16	367:16 368:7	439:6,16	11:6,9,10,21	231:12 232:10
288:11,22	368:23 369:12	440:10 441:17	11:24 12:5	232:18 234:6
289:22 290:10	370:12 372:4	442:21 443:22	15:21 16:2,10	235:16,19
291:18 293:23	372:18,21	445:3,15 446:2	16:21 17:14	246:21 247:11
294:3,9 295:19	374:16 376:1	448:9 449:9	19:3 20:4	250:20 252:10
296:6 297:2	376:20 377:8	450:23 452:7	23:11 25:17,21	255:24 256:3
298:4,13 299:7	377:17 380:14	452:21 453:5	28:11 34:6,16	258:10 262:22
299:12,17,20	381:18 382:9	453:14 454:2,5	34:23 36:24	269:19 273:16
299:24 300:3	382:23 383:19	455:6,23 457:7	37:9,20,24	277:20,20
301:2,8,22	384:18 385:9	457:13 458:17	38:8,12 39:19	279:16 281:7
302:14 303:8	386:10 387:4	459:11,20	39:23 42:7	284:7 287:2

288:3,7 291:3	360:11 361:15	106:18,24	344:21 345:1	280:1 457:24
293:6 297:6	480:8	107:22 108:8	345:16 348:20	458:5
298:16 303:19	<b>oncology</b> 20:22	110:16,18	357:2,11	<b>ore</b> 119:17,19
304:5 307:6	48:6 94:3	111:17 124:21	361:20 371:23	140:15,16
309:21 316:7	325:24 360:11	125:20 126:6	372:15 373:9	454:8
316:16 321:2	360:12 362:24	127:6 128:5	373:16,23	<b>oreardon</b> 2:13
344:9 345:21	364:13	130:23 131:13	374:8 375:3,6	<b>organization</b>
347:8 350:2	<b>ones</b> 39:6 93:19	134:4,17,21	376:15,22	363:15 389:11
351:7,11,20	94:1,3 118:20	138:20 139:15	377:5,13 378:1	473:15
352:7 353:1	148:4 197:19	139:18 140:24	378:12,18	<b>organizations</b>
354:8,14,19	400:4 414:21	141:5,21 142:9	381:1 384:4,5	362:19 363:8
357:23 358:4	414:23,24	143:24 144:21	400:14,22	364:19
364:2 370:22	447:6	145:7,15 146:4	451:9 462:14	<b>orient</b> 62:20
371:21 374:23	<b>onetime</b> 188:20	148:11,13,15	463:1 464:13	240:4 320:17
375:4 380:5	190:5,9,20	148:18 149:3	465:4,8,21	<b>original</b> 6:11
389:7 391:4	<b>ongoing</b> 257:11	149:11 150:10	466:2,18,23	39:24 41:3
394:7 395:23	<b>online</b> 34:19,22	150:13,19	467:5,8,17,20	329:20
396:16 427:14	<b>oophorectomy</b>	151:5,7,16	468:14,18	<b>originally</b> 41:17
429:6 430:7	8:13	152:12 158:2,3	482:21	<b>outdoor</b> 476:3
441:14 443:22	<b>open</b> 193:8	158:6,8 165:11	<b>opinions</b> 29:17	476:16
444:13 453:15	336:17 387:9	165:24 166:13	30:16 32:19	<b>outliers</b> 106:17
462:6 463:17	443:15 456:23	167:20 171:15	36:3,5 66:18	<b>outline</b> 12:24
473:14 477:20	456:24,24	171:19 174:13	75:7 76:3 83:3	<b>outside</b> 165:6
479:11 481:10	<b>opening</b> 193:4,5	174:16,23	83:7 88:21	193:9,22 194:4
483:15	193:7 387:11	176:3 178:12	95:5,8 96:18	194:10,24
<b>old</b> 58:3 236:10	<b>operate</b> 411:20	178:15 180:7	96:23 107:10	195:7,14,15
283:2	<b>operated</b> 445:1	181:2,22	154:14 157:7	443:15
<b>older</b> 470:15	<b>operations</b>	191:22 193:17	170:12 172:17	<b>ovarian</b> 7:5,8,18
<b>omitted</b> 245:20	28:18	196:18 201:5	191:22 225:24	7:22 8:5,7,11
<b>once</b> 58:24	<b>opined</b> 261:12	204:12 205:11	271:23 303:3	8:14,17 14:1
94:13 170:22	<b>opines</b> 179:13	206:19 208:22	360:21 383:17	14:24 15:7
170:22 189:1	<b>opining</b> 297:13	213:1 214:8	387:1 446:19	17:8 18:4,14
189:24 279:23	<b>opinion</b> 25:1,4	221:6 223:17	450:12,18	19:12,19,23
289:1 348:19	25:24 26:14,14	228:13,14	453:8,12 457:8	20:1,8,15,19
478:5 482:1	27:7,8 29:23	229:7 232:5	457:24 461:8	21:3,20 42:23
<b>oncologist</b> 42:22	30:24 56:14	233:7 234:11	482:10	43:5,7 44:12
59:10,21 60:3	57:11,15 58:9	237:17 241:4	<b>opportunity</b>	45:6,13 47:17
62:23 73:3	58:21 61:2,22	255:18 256:20	31:1 76:2	48:3,7 54:14
74:4 186:2	62:8,10 64:9	259:19 268:16	122:21 129:9	54:18,22 55:7
272:14 286:12	65:14 67:2,12	270:10 278:18	446:10	55:18,20 56:3
292:8 296:22	75:11,14,20	280:1 281:9,13	<b>opposed</b> 228:2,7	56:4,6,8,16,23
341:9 348:8	76:6,10 77:1,4	281:17 284:15	<b>opposite</b> 201:3	57:1,6,16,23
352:19 353:2	77:23 78:5,10	301:20,24	<b>oral</b> 1:12 6:4	58:10,21,24
397:13 398:16	78:13 79:1	303:12 325:23	421:16 422:1	59:3,9 61:6,12
453:6,7 480:3	84:5,13 85:15	327:7 336:10	422:21	61:16,23 62:4
481:13,23	87:1 88:10	336:20 338:2	<b>oranges</b> 162:8	63:1,18,22
<b>oncologists</b>	89:9 101:9	340:4 343:13	<b>order</b> 231:19	64:9,13,15,20

64:23 65:7	268:5 271:19	364:20 365:16	195:10 204:7	315:7,8,9,11
67:3,13 76:7	272:8 273:8,14	366:4 368:6	204:13 208:24	378:4,5,6,9
106:6,20	274:17 275:5	372:3 375:24	209:3,11,14,17	388:10,11,12
107:23 108:9	276:7 277:9	376:4,6,12,24	213:2 214:9	388:14 444:2,3
108:11 109:4	280:13,21	380:23 381:8	221:7 227:11	444:4,6 445:18
109:23 110:4	281:1,10	381:16 382:15	230:9 232:7	445:19,20,22
110:18 126:23	284:11 289:3	382:15 385:15	345:2 387:17	461:17,18,19
138:16 153:1	290:17,23	387:16 389:11	409:22,24	461:21 484:5,7
153:11,15,22	291:4 292:9,21	389:14,19	411:19 434:8	<b>page</b> 17:12,13
153:24 154:18	294:22 295:3	395:6 397:14	434:10 440:14	25:16 38:3,10
154:21 155:6	295:17 296:16	399:15,23	440:22 442:12	38:21 39:17
155:16 156:5	296:24 297:14	400:7,13,17,24	442:20 443:2	41:13 54:3
156:23 158:8	297:21,24	401:13,23	457:1,16 472:4	70:12 72:11
159:20 160:1	298:9,12,17,19	404:20 405:2,7	473:8,19	77:8 78:4 79:3
160:14,18,23	299:5 301:14	406:18,21	474:11 477:14	79:11 80:10
163:16,23	301:15 302:2,5	407:6,11,13,14	<b>ovary</b> 154:7,7	81:15 99:14
164:10,21,23	302:24 303:1	407:24 410:3,8	159:4 204:5	100:19 101:5
165:6,19 166:7	304:4,20	410:13,16,19	206:22,24	102:12 105:17
166:10,16	309:10,22,24	411:3,8,15	209:22 211:22	112:13 117:10
168:13,23	310:7 311:7	412:1,10,19	213:6 215:16	129:1 157:5
169:17 171:17	316:13 317:21	413:13 420:23	218:7 335:19	158:24 193:16
174:15,20	317:23 325:8	421:7,9,15,17	335:23 336:7	198:14 200:20
175:6 176:4,9	325:13 326:1	421:20 422:2,5	336:13,18,22	221:17 224:19
176:16,19	326:14,17	422:18,23	336:24 339:20	225:1,4,21
177:6,19	327:9,21,22	423:5,9,13	426:3 428:23	226:8,13,21
178:15 179:22	328:4,13	428:13 429:10	430:21 432:1,3	233:13 239:2,6
180:1,9,15,16	331:13 336:22	430:3,4,10,11	456:4,7,9,18	239:9 245:7
181:18 182:6	337:13,17	430:17,21	477:1	253:8,10
184:5,8 185:11	338:3,19	437:3,20 438:6	<b>overall</b> 52:10	255:15 258:2,4
195:5,24 196:9	339:20 342:6	438:19,24	148:22 160:13	260:5 261:13
197:3 203:22	342:15 343:2,5	445:2,6 447:4	248:13 290:21	262:19,22
205:4 208:15	343:7 346:11	454:17 456:5,8	368:9	270:12 273:11
208:24 219:9	346:21,22	456:10 457:16	<b>oxidation</b>	274:9 275:1,11
220:6,9,19	347:9,19,24	458:1,7 462:3	406:24	275:14,17
229:2,4,15	348:5,16	462:10,14,21	<b>oxidative</b> 219:14	276:3 279:12
232:22 233:17	350:11,24	463:1 464:16	380:20 381:22	290:21 306:18
234:21,23	351:22 352:9	464:22 465:5	382:2 384:6	310:19 319:13
235:1 237:6,19	353:18 354:3	465:17,21	385:14	319:19 320:5
238:6 241:3,7	354:21 355:1,7	466:3,20 467:2	<b>oxygen</b> 407:1	332:2 334:14
241:9 244:11	355:12 356:1,5	467:7,23 469:1	<b>oz</b> 64:2 65:4	351:5 367:20
245:9 248:19	356:13 357:3	472:3,23 473:3		371:3 380:7,11
251:21 253:15	357:12 359:14	473:5 480:18	<b>P</b>	380:12,13
253:23 254:8	359:17,23	<b>ovaries</b> 182:10	<b>p</b> 2:1,1,2 3:1,1	384:3,4 391:15
254:21 257:9	360:23 361:5,7	191:2,24 192:3	4:1,1,6 213:12	394:17,20
259:2 264:10	361:13 362:5	192:5,14,23	213:13,14,16	418:23,23
265:17 266:17	362:20 363:1	193:10,23	252:21,22,23	425:17,24
267:5,6,15	363:10,18,20	194:5,11,24	253:2 307:2	426:10,20

428:4,12 429:5	368:17 381:4,9	356:24 361:23	212:19	391:19 392:11
429:17 448:11	381:24 382:22	427:11 433:21	<b>patient</b> 12:22,22	392:16 393:12
449:19 450:6	384:16,21	459:6	154:21,24	<b>peerreview</b>
455:10 487:3	386:9,13 393:7	<b>particle</b> 7:9	155:2,14,18	263:17
488:3	397:16 425:11	194:3,9 212:13	156:1 185:18	<b>peerreviewed</b>
<b>pages</b> 38:12 40:3	436:16 438:3	443:16	325:12 338:19	33:19,21,24
114:21 224:4	474:8 480:9	<b>particles</b> 192:6	352:13 407:19	35:2 54:13
275:16 391:14	<b>papers</b> 18:8	192:11,13,21	472:3,10	106:13
486:5	19:20 62:6	214:8,13 221:6	<b>patientfacing</b>	<b>pelvic</b> 206:21,23
<b>paid</b> 207:16	63:13 163:19	223:22 230:2	361:3	207:1 352:19
358:20 389:18	169:3 177:20	230:24 232:11	<b>patients</b> 46:24	<b>pelvis</b> 440:14
395:15,18,19	281:23 287:12	336:17 417:21	47:18,21 48:1	443:2
397:18	287:12 312:17	436:11,19	48:8,24 52:2	<b>pending</b> 90:7
<b>pancreas</b> 433:1	312:24 328:18	437:1,13,17	52:10,15 59:2	<b>penninkilampi</b>
<b>panel</b> 34:14	329:9 334:7	438:17 441:10	59:11,14,15	235:2 236:5
<b>panties</b> 333:2	371:7 380:21	442:16 443:8	60:6 155:6	238:2 240:17
334:4	382:19	457:1,5 474:18	185:12,22	240:20 244:19
<b>paoletti</b> 143:1	<b>papilloma</b>	475:10 477:4	186:3,7,10,18	245:1 246:7,9
<b>paper</b> 18:9 19:2	166:23	<b>particular</b> 15:8	187:5 188:5,8	246:13,19,22
19:6,9,10,14	<b>paragraph</b> 99:9	153:19 230:12	188:11,21	248:9,18 249:3
19:24 20:6,9	100:5,6,11	279:12 336:5	190:1,3 228:11	249:12 250:10
27:16,24,24	101:8,12,24	336:23 338:14	272:16 293:8	251:2,11,15,23
92:14,17	102:4,11	367:9 372:18	326:3,7 328:6	253:6,8,13
158:14,15,15	112:14 142:24	379:5 452:16	340:1 346:8	260:12,19
163:20 198:2,7	159:1 161:4	453:23 454:8	348:15,17	262:10,13,19
198:9 202:14	214:19 227:1	<b>particularly</b>	349:9 350:4	262:23 263:5
207:13 210:6	233:13 253:11	198:19 243:17	352:21 359:19	264:1,8,15
220:16,16	258:5,11	270:21 293:3	407:24 411:12	265:1 283:10
235:4,13,21	306:17,22	305:11,21	411:19,24	329:23 470:7
239:9 244:22	320:18	311:14 338:11	412:11 432:21	<b>penninkilampis</b>
245:13 247:20	<b>parity</b> 387:23	395:17	445:5 477:21	241:24
248:3 256:7	<b>part</b> 13:15 14:2	<b>particulates</b>	<b>paula</b> 2:13	<b>pennsylvania</b>
257:22 258:2,7	18:9 19:23	228:18 232:16	<b>pay</b> 250:10	3:8
259:20 263:15	23:12 47:14	<b>parties</b> 485:11	<b>paying</b> 37:13	<b>people</b> 15:14
265:11 280:8	49:22 73:10	<b>partner</b> 348:11	<b>payment</b> 37:22	28:17,23 43:2
281:17 282:8	78:14 94:2	<b>partners</b> 196:8	39:10	45:20 96:2
286:7 293:20	113:5 133:22	197:8	<b>pbrown</b> 2:14	199:17 293:13
293:22 294:2	136:5 139:17	<b>parts</b> 105:11	<b>pc</b> 2:2	304:20 309:8
295:1,24 302:4	141:14 153:7	178:24	<b>pcp</b> 16:22 17:7	309:21,24
303:10,20,24	158:6 159:16	<b>parttime</b> 51:22	17:24	318:11,23
306:23 308:11	178:22 186:1	<b>pasted</b> 105:8	<b>pcpc</b> 17:18	332:12 341:16
311:11 312:8	203:7 218:15	<b>pathologic</b>	25:15	342:19 343:24
313:10 314:15	230:12 249:22	19:15,17 445:4	<b>pdq</b> 8:8 278:23	344:14 346:13
314:15 319:10	258:7 263:16	<b>pathologists</b>	449:11	347:22 358:15
322:7,18	277:10 332:8	436:23	<b>peas</b> 435:3	366:10 392:16
332:18 340:8	332:10,10	<b>pathology</b> 21:2	<b>peer</b> 34:2,8 35:7	439:4,8 468:10
360:2 361:24	343:12 352:12	133:8 155:12	391:10,12,15	<b>percent</b> 48:4,7



85:16 111:14 111:18,23 121:6 124:22 125:4,6,10,20 126:2,6,11 131:8,10 290:23 308:23 308:24 309:12 309:15,21,23 310:9,13 315:17 319:4 320:21 321:15 322:8 371:4 375:13,14,16 375:20 411:19 473:8 <b>percentage</b> 51:24 52:8 74:11 121:14 131:3,6 149:4 149:6 150:2,8 309:11 336:6 <b>perfectly</b> 27:5 <b>perform</b> 256:3 452:14 <b>performed</b> 46:15 115:23 121:10 185:21 433:18 435:24 448:12 <b>perineal</b> 7:8,21 110:17 161:21 189:8 191:15 192:18 208:9 209:4,13 227:2 233:17 253:15 253:22 266:18 267:5 274:13 275:4,21 276:5 276:24 277:8 277:19 328:12 336:6 338:4,11 338:15 345:1 348:4 361:6,12 404:21 436:22 449:20 450:12 457:6	<b>perineally</b> 108:2 110:3 161:16 208:3 241:5 336:12 345:7 346:11 357:12 <b>perineum</b> 164:3 164:22 170:20 179:24 190:15 193:4 194:19 206:15 229:6 230:2 335:7,12 400:23 406:3 439:2 456:23 <b>period</b> 44:10 47:6,15,18,23 48:11 50:14 115:6 170:23 243:20 316:13 317:20 325:17 325:18 326:1 326:17,20 327:18 328:11 351:12 362:17 410:5 473:18 <b>periods</b> 114:14 378:20 422:7 422:15 <b>peritoneal</b> 8:7 230:3 272:9 410:22 <b>peritoneum</b> 440:9 <b>peroneum</b> 190:17 <b>person</b> 186:17 190:23 257:24 257:24 390:16 478:2 <b>personal</b> 4:5 185:13 416:21 <b>personally</b> 155:9 185:23 191:19 291:10 387:24 390:13 <b>persons</b> 184:19 190:10 327:15 <b>perspective</b>	194:21,22 <b>pertinent</b> 71:8 <b>petition</b> 228:22 229:11 232:1 329:12 <b>ph</b> 481:19 <b>pharmatech</b> 3:23 <b>philadelphia</b> 3:8 <b>phone</b> 478:2,5 478:15,18 479:21 481:4,7 <b>physician</b> 46:18 51:21 73:11 156:1 397:12 <b>physicians</b> 348:7,9 <b>picked</b> 358:16 414:10 415:2 <b>picking</b> 81:4 <b>picture</b> 351:4,9 351:21 354:2 <b>picturing</b> 460:19 <b>piece</b> 30:20 36:15 70:20 71:4 138:17 196:22 212:19 248:8 270:6 385:17 <b>pieces</b> 70:18 273:2 385:1 <b>pier</b> 373:13,21 374:11 415:9 <b>pierce</b> 457:5 <b>piers</b> 373:12,15 418:24 420:12 <b>pill</b> 333:2 <b>pills</b> 56:2 65:7 <b>pisano</b> 300:4 <b>place</b> 13:7 44:5 355:8 485:8 <b>placed</b> 184:18 184:21,22 186:12 212:17 274:21 409:7 409:13,21	442:17 <b>places</b> 91:11 92:18 185:15 341:10 <b>placing</b> 185:1 <b>plainly</b> 88:10 <b>plaintiff</b> 10:5 35:11 57:3 95:7 107:18 357:20 <b>plaintiffs</b> 2:6,11 2:16 12:2 24:3 31:6 36:16 43:17 49:24 50:4,10 52:19 57:14 58:11 59:23 60:4,16 61:7,17 62:1 62:12 66:4 67:21,23 72:18 72:21 78:1,3 80:11,15,19 81:3,20,24 82:4 83:6 84:3 88:18 90:3,24 91:19 93:9,15 94:10 96:1,6 97:13 112:3,7 118:14 125:11 125:22 126:15 137:5 207:8,16 219:20 235:21 236:18 358:6 358:20 359:3 362:13 386:8 389:18 395:6 397:18 436:24 462:1 463:18 465:1 478:1 <b>plan</b> 359:24 385:22 386:6 <b>planned</b> 359:9 <b>plans</b> 220:4 359:2,21 386:2 <b>plaques</b> 338:21 <b>platy</b> 111:1 164:15 168:7	170:3 179:2 284:16,16 372:8 375:10 375:19 377:14 378:14 379:7 399:15 400:2 400:15 401:7 404:3 455:22 456:2 459:2,4 459:15 465:10 466:19 467:6,8 <b>play</b> 179:23 <b>playing</b> 399:13 <b>plays</b> 174:19 177:18 220:17 434:2 <b>plaza</b> 2:9 <b>please</b> 9:6 37:5 230:20 231:21 275:23 301:6 340:23 394:6 418:18 455:11 <b>plenty</b> 129:14 <b>pleura</b> 184:22 184:23 185:2 186:19 189:7 <b>pleural</b> 160:20 185:12,16 186:8 338:21 <b>pleurodesis</b> 184:15 185:7 185:14,17,21 186:4,11,12 187:3,11,15 188:2,11,15 189:1,16 190:16,20,24 191:8,11 217:13,16 <b>plm</b> 129:3 <b>plunkett</b> 95:15 95:23 <b>plus</b> 167:7 <b>point</b> 96:5 135:17 169:21 179:18 212:4 230:12 239:16
---	--	--	---	---

278:22 291:11	<b>possession</b>	25:2,5,24 26:6	152:15,22,24	301:16 302:2
293:15 305:4	406:15	26:24 27:17	153:3,11,18,24	302:12,22,23
318:3 324:22	<b>possibility</b> 16:8	28:2,3,4 43:7	154:6 161:15	304:21 308:3
325:3 352:14	208:17 310:24	45:7 54:14,17	162:3,9,18	308:22 309:9
381:5 382:1	365:6	54:22 55:6	163:3,10 164:2	311:6 315:15
394:1 415:13	<b>possible</b> 164:16	56:15,23 57:4	164:3,10,19	315:18,24
416:4 427:13	217:14 314:6	57:5,14,16,23	165:16,23	316:5,23
441:7 444:18	314:16 387:24	58:2,10,12,21	166:15 167:17	317:12,19
453:17	456:16,22	58:23 59:8,11	169:16,22	318:10,12,23
<b>pointed</b> 68:13	<b>possibly</b> 164:18	60:6 61:5,11	170:6,15,19	319:4 320:19
119:15 120:3,7	168:8 170:9	61:15,23 62:3	171:1,6,9,16	320:22 321:17
121:9,16	171:10 242:8	62:24 64:9,12	173:18 174:24	323:1,2,10,19
197:20 214:7	262:8 280:17	64:15,19 67:2	175:13 176:2	324:5 325:7,14
217:6 238:13	281:3,4 282:1	67:13 106:6,23	176:22 177:21	327:16,16,23
260:13,20	284:18,21	107:1,12,22,24	178:15,23	328:23 331:12
292:2 374:5	401:7 402:8,15	108:9,11 109:3	179:1,24 180:8	333:2 334:2
<b>pointing</b> 230:1	402:20 403:3,8	109:22 110:2	180:17,23	336:6,12,21,23
230:11 300:11	403:12 404:3,9	110:17,19,24	181:4,11	337:9,23 338:6
<b>points</b> 103:22	434:6,8 458:14	111:8,12,15,18	182:14,16,20	339:6,12,17
340:9 341:22	459:3	113:18 114:13	183:6 190:17	340:6 341:20
<b>policy</b> 50:19,22	<b>post</b> 2014 312:17	119:9 120:11	191:7,11,14	342:5 343:13
<b>pooled</b> 261:11	313:10	121:6,20	193:21 194:9	343:17,21
261:19,24	<b>posted</b> 351:14	123:22 124:2	194:17,18	344:2,21 345:1
262:6 265:11	462:19	124:11,22	197:1,4 199:6	345:6,18,23
<b>pooling</b> 261:2	<b>postmenopausal</b>	125:20 126:23	200:23 201:10	346:10,15
<b>popular</b> 55:2,22	321:5 337:17	127:1,7 128:1	201:22 202:8	348:4,15
55:23 56:1	369:2	128:22 129:2	203:22,24	349:10 350:5,8
462:9	<b>postmenopause</b>	129:19 130:2	204:18 205:5	352:10 356:14
<b>population</b>	316:19	130:13,23	205:12,19,21	356:18,19
292:19 295:16	<b>potent</b> 458:21	131:1,3,10,14	206:2,7 207:17	357:3,11,21,24
298:10,11,23	<b>potential</b> 44:24	131:19 133:16	208:3,13,23	359:14,22
299:4 352:18	62:24 200:12	134:5,8,12,17	209:2,5,10,12	361:6,12 362:5
370:10	206:1,1,21	134:22 135:21	209:13,14,17	362:13 363:16
<b>portion</b> 425:19	227:5 329:4	135:23 136:19	209:21 220:18	363:20 368:6
471:7	343:8 423:13	138:16 139:16	221:14 234:20	371:24 372:2,7
<b>pose</b> 295:13	430:2,9	140:24 142:16	234:23 237:19	372:17 373:4
<b>position</b> 88:7,13	<b>potentially</b>	142:19,21	241:5 251:22	373:10,17,24
193:3 282:18	180:18 209:10	143:5,6 144:2	257:5 264:10	374:8,15,20
444:10,22	351:18 401:3	144:7,8 145:8	267:6,15 268:5	375:7,23 376:6
<b>positive</b> 145:13	438:5	145:10,11,16	274:2 280:13	376:23 377:7
145:19 146:13	<b>powder</b> 1:3 7:18	146:5,12,22	281:10 282:6	377:19,23
146:23 147:8	14:1,22,24	147:6,8,11,16	290:4,24	378:13,19
147:13 148:17	15:7,10,12,13	147:19 148:13	292:14,20	379:11,13,17
159:5,19 264:9	15:17,22 16:1	149:1,5,12	293:21 294:24	380:9 381:2,6
265:3 369:8	16:4,5,7,12	150:2,3,9,15	295:18 296:16	381:8,11,15
426:4 428:24	17:1,21 19:15	150:21 151:4,9	297:9,13 298:9	384:5 385:3,14
452:17	20:2 24:22	151:24 152:6	298:11 301:15	399:14,23

400:19 401:14 401:24 404:22 405:3,11 407:16 409:20 416:6,16 420:15,24 423:9 433:9 434:13 438:17 447:14,15,17 448:3,5 456:18 458:1,5,6,6,10 459:6 461:7 464:6,16,21 465:3,5,9,16 465:21 466:3,5 466:8,15,24 467:12,13,22 468:3,10,14 470:3 471:5 472:12 474:1,4 477:7 <b>powdered</b> 28:6 28:24 <b>powders</b> 22:4 25:11 26:15 27:10 29:19,24 30:24 124:20 128:5 415:16 434:15 435:17 436:13 437:2 437:19 <b>power</b> 99:19 101:14 255:16 255:19,21 256:3,23 257:1 257:14,16 259:4,9,12,15 259:19 261:11 261:14,18,24 262:6 266:5 267:22 <b>powered</b> 296:14 <b>practice</b> 16:14 46:22 47:14 48:2,7 49:9 59:9,13 60:5 60:11 73:3	74:3 133:23 286:16 348:3,6 348:13 349:9 350:3 359:11 359:20 362:24 <b>practiced</b> 59:20 60:3 <b>practices</b> 1:4 43:19 46:4 <b>practicing</b> 20:22 33:15 48:6,11 62:23 228:9 286:11 292:8 <b>practitioner</b> 42:16 348:8,10 <b>preamble</b> 6:10 31:8,17,20 33:2,10 270:4 <b>precancerous</b> 326:13 409:23 <b>preference</b> 200:4 <b>preliminary</b> 140:8 <b>preparatory</b> 399:20 <b>prepare</b> 105:10 <b>prepared</b> 39:8 <b>preparing</b> 97:16 <b>presence</b> 133:16 175:23 176:2 180:7 459:22 462:20 <b>present</b> 45:15 85:21,22 87:18 180:23 258:16 460:5 <b>presentation</b> 54:17 <b>presented</b> 233:15 <b>press</b> 55:2,23 56:1 462:9,9 <b>presumed</b> 163:24 <b>pretty</b> 171:12 369:10	<b>prevalences</b> 307:7 308:4 <b>prevent</b> 45:18 <b>prevention</b> 8:8 233:24 272:9 <b>previously</b> 80:2 200:10 295:21 428:6 463:5 <b>primary</b> 8:7 186:17 257:6 272:8 293:14 293:19 302:20 302:20 <b>princeton</b> 2:20 130:2 <b>principles</b> 33:18 <b>printed</b> 113:10 <b>printout</b> 12:11 113:15 128:19 272:7 <b>prior</b> 11:24 19:21 48:5 57:2,9,13,19 59:7,12 60:3,9 60:14 62:5 94:20 137:6 281:21 288:3 304:17 308:20 321:18 350:2 355:20,23 357:6,16 470:3 485:4 <b>private</b> 351:13 <b>probably</b> 10:11 26:19 47:7 65:22 69:12 141:8 241:17 283:24 360:14 361:15 366:10 379:19 389:4 402:16 403:15 475:10 <b>procancer</b> 22:23 <b>procancerous</b> 22:19 <b>procedure</b> 184:18 454:15	454:17 <b>proceedings</b> 5:4 9:1 <b>process</b> 33:24 34:3,13 35:2,8 177:5 263:17 <b>produced</b> 66:6 67:21 179:19 179:20 <b>produces</b> 185:7 215:16 <b>product</b> 14:1,24 15:8,10,12 16:5,12 28:3 58:23 111:8 114:24 119:7 123:15 124:11 124:21 129:2 136:14 142:21 145:3,10,11 147:7,15 148:18 149:1,5 151:4,24 152:22,24 153:16,18 162:4,10 163:3 164:3,19,20 165:16 167:17 171:1 174:11 176:2 177:21 178:23 180:18 180:23 181:11 182:7,17 184:9 190:17 197:1 201:23 220:19 290:4 299:4 327:16,23 334:21,21 335:1 372:7 376:23 377:19 377:24 401:16 402:6,11 404:14,22 405:7,11,17,19 405:20,21,22 406:2 421:4,9 421:11 458:10	458:16,19,22 459:1,6 464:21 466:3,5,24 467:12,13,15 467:22 468:3 468:24 469:4,6 474:2 <b>production</b> 39:24 74:12 92:7,22 <b>products</b> 1:3,4 4:5 16:3 62:3 64:13 113:18 120:12 121:6 121:21 125:21 128:22 129:19 136:13 143:20 144:1,2,7,9,11 144:15,21,23 145:16,20 146:5,8,13,15 146:19,23 147:16,19 148:1,2,2,13 149:12 150:3,9 150:15,21 154:5,10 165:24 199:6 372:11 373:17 374:1 375:7,23 376:6 377:16 377:22 378:13 378:19 379:12 399:14,23 400:1,19,24 401:14,24 405:3 416:6,21 420:24 433:10 435:19 442:24 447:14,15 448:3,21 449:1 456:19 458:1,5 461:7 465:16 465:21 467:12 467:22 468:15 470:3 471:5,9 <b>professional</b> 8:8
--	--	---	--	---

272:10 362:19	448:23	<b>publish</b> 64:8	<b>pushed</b> 195:15	266:6
472:16 473:15	<b>provide</b> 40:16	<b>published</b> 34:12	<b>put</b> 24:12 34:3	<b>query</b> 304:24
<b>professor</b>	70:2,9 80:17	34:17,19,22	83:23 108:19	<b>question</b> 13:24
444:11	88:19 231:22	54:13 63:12,21	120:16 148:6	13:24 14:17,20
<b>professorship</b>	<b>provided</b> 12:2	64:11 106:13	155:9 185:17	15:1 24:12,20
444:17	12:19 14:8,10	106:15 141:18	270:9 296:19	25:21 26:22
<b>progression</b>	32:20 33:2	234:22 235:13	334:11 335:11	27:20 32:1
174:20 175:8	34:8 35:1,11	235:16,18	338:3 387:6	33:7 39:3,5
176:19 180:16	36:16 39:12	236:6 237:1	392:12 410:12	44:12 52:12,14
184:7 376:12	40:13 65:15	245:21 252:11	451:16	58:16 60:14
389:5	69:8 70:6,8,8	256:7 257:13	<b>puts</b> 56:24	61:11,17 62:16
<b>proinflammat...</b>	72:17,20,23	257:16 278:21	164:21 206:3	65:10 66:16
180:14 184:6	79:20,23 80:2	279:5 280:8	335:7	67:11 77:15
<b>project</b> 12:23	80:10,14 82:6	282:8,14	<b>putting</b> 219:6,10	82:8 83:3 84:6
<b>proliferation</b>	83:1,13 84:11	287:13,17	256:17	84:8,16 85:3,6
409:23	84:22 85:1	311:24 329:17		85:11,13 86:9
<b>promise</b> 212:4	90:23 92:4,13	382:6 391:7	<b>Q</b>	86:22 87:4
<b>prompted</b> 481:7	92:14,20 93:8	412:16 462:13	<b>qualified</b> 133:15	88:2,15,24,24
<b>prone</b> 254:2,9	94:9 106:3	469:22	<b>quality</b> 111:7	89:2,5,8 92:19
382:3	113:23 114:5	<b>pubmed</b> 13:12	198:19 199:16	106:1,4,5
<b>prophylactic</b>	139:24 258:20	14:5	200:8 207:13	107:19,23
473:7	260:8 414:15	<b>pull</b> 128:13	239:18 245:19	115:13,18
<b>proposed</b> 90:22	427:6,9 483:13	173:11 292:22	246:8 251:16	119:13 120:19
220:8 226:4	<b>provista</b> 48:22	423:19 470:22	260:20 262:11	121:3 122:19
<b>proposition</b> 20:6	48:24 49:6,19	<b>pulled</b> 14:8	263:10 292:3	122:23 123:2,6
23:11,17	49:20 50:1,24	28:10 31:21	293:4 295:13	123:11 129:15
<b>propounded</b>	51:2 478:23	32:1 98:10	311:23 470:9	129:17 137:24
486:6	<b>pti</b> 3:23	113:2 143:8	<b>quantification</b>	138:4,5,7
<b>prospective</b>	<b>public</b> 1:19 9:10	461:5 467:21	452:15 463:19	139:1,3 142:1
28:14 197:16	30:4,15 32:6	<b>pulmonologist</b>	463:23 464:2	144:4 146:20
254:21 255:1	64:16 270:14	186:14,16	<b>quantify</b> 107:11	149:10,19,21
256:14,20	270:21 271:7	<b>purchased</b>	107:24 108:10	150:18,19,23
261:12,24	280:12 281:8	136:19	150:1,7 161:19	152:8 156:19
262:7 265:16	486:19	<b>pure</b> 375:10	162:2,15,23	163:9 178:8
266:15 267:14	<b>publication</b>	455:22	181:8 189:4	179:17 180:12
282:4,11	33:20,22 91:5	<b>purported</b>	191:13 218:19	184:3 192:20
288:21 289:9	91:6 103:14	262:24 448:1	328:11 334:22	202:16 203:4
290:8,12	200:3 235:14	455:17	335:2,5,16	203:10,14
291:21 316:17	258:5 280:5	<b>purpose</b> 65:5	336:2 373:3,5	208:11,12
317:22 318:2,8	283:7 360:2	185:1 219:23	375:1	215:4 230:20
370:17	386:4	295:4	<b>quantitate</b>	233:10,11
<b>protect</b> 364:21	<b>publications</b>	<b>purposes</b> 37:12	333:24 334:8	245:24 247:4
365:2	54:9 64:1	39:9 93:3	<b>quantities</b> 185:8	248:24 255:20
<b>protection</b>	<b>publicity</b> 310:22	178:12 336:10	<b>quantity</b> 107:1	255:23 256:8
298:18	<b>publicize</b> 359:22	<b>pursuant</b> 1:13	476:18	256:10 257:12
<b>protocol</b> 300:10	<b>publicly</b> 91:3,8	<b>pursuing</b> 363:6	<b>queried</b> 109:10	263:21 266:11
<b>prove</b> 413:12	104:10 361:4	<b>push</b> 473:6	<b>queries</b> 99:20	266:12 267:9

267:12,13 268:3,18 269:5 269:10,12,14 269:18,24 275:23 277:21 289:2 291:9,15 294:18 295:14 295:20 296:14 296:20 299:9 299:15 300:7 300:13,17,24 301:3,12 303:22 310:8 312:20,22 318:15 320:16 321:11 323:17 334:10 338:14 339:16 340:23 342:13 343:11 343:14 344:4,8 345:5 346:10 372:22 377:11 378:17 380:5 387:22 392:15 403:21 422:11 422:14 436:8 439:9 444:8 458:9 460:2 468:22 472:22 482:7,16,19 <b>questionable</b> 86:13 <b>questioning</b> 371:1 380:6 385:21 <b>questions</b> 9:18 10:18,24 24:5 24:16 26:11,19 33:16 38:1 41:6 64:18,22 65:3,8 82:5,19 83:5 84:19 86:2 89:6 109:9 120:15 143:11 149:17 198:11 203:1 231:3,7,13,19	245:14 266:2 266:24 267:24 269:7 289:9,12 291:12,13 389:3 398:3 399:12 401:21 424:18 445:14 446:3,7 449:15 451:18,22 452:10 453:20 454:20 456:11 457:23 458:2 462:1,4 463:10 469:9 470:17 478:10 482:5 483:19 486:6 <b>quick</b> 79:10 88:15 371:21 443:24 444:8 <b>quite</b> 410:16 <b>quote</b> 63:2 104:6 199:15 <b>quoted</b> 194:16 <b>quotes</b> 98:10,13 104:14 219:6  <hr/> <b>R</b> <hr/> <b>r</b> 2:1,13 3:1,11 4:1,6,6 <b>radicals</b> 407:1 <b>radioactive</b> 192:7 <b>raised</b> 20:7 65:11 230:24 363:5 364:3,10 <b>raises</b> 103:22 <b>ramirez</b> 4:7 <b>ran</b> 51:13 <b>random</b> 369:23 <b>randomized</b> 28:13 <b>range</b> 287:24 288:5 347:10 347:13 371:12 <b>rappel</b> 4:3 <b>rare</b> 254:20 255:7 267:7	410:16 <b>rate</b> 292:9 358:9 358:13,17 <b>rates</b> 8:13 <b>ratio</b> 262:24 313:24 368:10 <b>ratios</b> 263:12,15 263:19 307:15 311:2 369:14 <b>rats</b> 192:18 409:22 <b>raw</b> 405:13 471:4 <b>reach</b> 208:24 209:14 336:24 345:2 437:14 457:24 <b>reached</b> 457:15 <b>reaches</b> 335:19 335:23,24 336:12,21 <b>reaching</b> 207:12 336:6 450:12 450:18 451:9 456:17 <b>reaction</b> 175:1 211:8 215:12 217:8,15,17,19 217:20 409:2 409:16 <b>reactions</b> 23:15 215:1 407:18 <b>read</b> 13:7 24:11 31:19 70:24 71:2 72:8 94:4 94:4 101:13 113:19 143:7 149:24 157:11 158:15 203:2 209:19 258:14 271:24 277:14 286:6 295:4 311:3 312:13 313:4 314:14 349:21 351:21 360:10,11,15 366:10 389:24	397:15 398:8 398:14 403:2 429:24 449:4 471:7 476:2 486:4 <b>readers</b> 390:4 <b>reading</b> 180:12 212:2 214:18 250:2 253:18 253:19 275:11 277:18 297:7 308:1 310:20 328:18 349:22 376:8 390:16 429:12,15 <b>reads</b> 389:24 <b>ready</b> 65:21 <b>real</b> 52:13 79:9 369:4 371:21 443:24 <b>realized</b> 286:8 <b>really</b> 16:6 37:23 43:18,24 47:3 53:20 152:21 183:1 203:10 269:18 298:9 300:17 342:19 345:6,8 <b>realtime</b> 1:18 24:16 149:24 485:3,18 <b>reask</b> 149:23 <b>reason</b> 62:9 194:20 246:15 264:16,16,20 264:24 295:23 298:20 306:8 318:22 361:24 366:2 487:3 <b>reasonable</b> 284:23 400:11 <b>reasoning</b> 29:18 <b>reasons</b> 185:6,9 218:10 270:18 280:24 369:19 <b>reath</b> 3:6 <b>recalculate</b>	262:16 <b>recalculated</b> 263:23 <b>recall</b> 29:20 30:2 50:15,16,18 56:6,9 61:10 65:9,14 66:22 74:7 75:3,5 77:5,17 78:22 82:3 94:15 114:1 124:6 128:2 129:21 154:23 155:3 155:20 173:7 202:6 254:2,9 254:14 255:9 255:12 257:18 257:20,23 292:23 302:12 303:23 304:3,9 304:15 305:11 305:17 306:5,6 306:18 310:24 311:5,10,15 312:5,12,19 313:18,21,24 340:9,15,20 341:2,7 347:8 348:14 351:11 354:4,10 378:15 382:22 383:14 393:16 399:10 415:11 432:7 446:7 448:5,8 449:17 451:21 452:13 452:17 458:2 462:4 463:8,12 471:10 478:12 <b>receipt</b> 66:9 <b>receive</b> 94:13 <b>received</b> 35:20 41:17 94:16 114:8 174:2 395:22 396:5 453:21 <b>receives</b> 34:14
---	---	--	--	--



<b>recess</b> 89:19 139:8 213:13 252:22 315:8 378:5 388:11 444:3 445:19 461:18 <b>recipient</b> 353:16 <b>recognize</b> 360:23 <b>recognized</b> 154:18 <b>recollection</b> 45:5 50:21 210:3 <b>recommend</b> 432:20 473:6 <b>recommendat...</b> 472:8 473:16 <b>recommended</b> 350:9 393:10 472:2 <b>reconcile</b> 292:18 294:20 295:15 298:8 299:6 <b>record</b> 17:11 18:24 24:2,15 37:11 39:2 40:2,11,20 66:3 68:12 69:11 83:24 88:6,7 89:18 89:22 122:24 123:6,17 130:15 135:15 139:7,12 213:12,16 216:7,11 244:24 252:21 253:2 258:15 260:15 294:17 300:12,21 315:7,11 366:8 378:4,9 388:10 388:14 424:16 424:19,23 425:18 430:1 443:20 444:2,6	445:16,18,22 461:17,21 484:1,4 <b>records</b> 18:17 155:23 <b>reduce</b> 56:3 <b>reduces</b> 195:4 <b>reduction</b> 65:6 <b>rees</b> 3:11 <b>refer</b> 128:24 344:14 365:20 452:5 453:18 469:5 <b>reference</b> 16:18 16:21 68:6,8 69:23 70:12,15 70:16 71:4 75:22 95:16,19 112:13 141:10 270:13,19 271:1,13 380:11 384:3,7 450:2 <b>referenced</b> 25:16 76:24 77:4 92:8 194:16 229:10 232:7 234:17 271:14 278:3,6 363:9 375:8 383:21 <b>references</b> 13:9 14:6,7,8 17:6 68:9 69:5,7 91:11 92:17 113:7 142:3,12 142:14,17 157:14 158:16 208:8 275:17 360:1 449:23 450:8,11,16 451:1,6 469:21 483:1,11,12 <b>referencing</b> 429:19 430:13 <b>referred</b> 121:15 163:19 172:5	185:22 246:1 380:3 415:9 431:20 443:9 447:14 459:15 477:21 <b>referring</b> 44:15 79:3 102:3 112:2 117:9 125:14 132:7 179:5 185:15 186:3,7 187:20 207:3 216:7 222:20 228:21 260:2 287:8,24 291:3,5 335:6 335:11 370:10 432:5 <b>refers</b> 431:4 <b>refresh</b> 198:10 202:24 <b>regard</b> 229:18 453:20 470:8 <b>regarding</b> 20:7 30:16 44:23 54:14,17,22 55:6,17 59:8 61:5,15 63:18 63:22 86:11 88:19 128:20 148:10 229:2,3 229:4 261:20 361:12 389:13 393:3 394:4 395:1 450:12 452:1 462:2,3 462:10 463:11 <b>registered</b> 1:17 485:3,17 <b>regular</b> 60:5,11 133:22 <b>regularly</b> 170:21 <b>reid</b> 158:14 163:20 <b>rejected</b> 222:15 222:19,23 <b>relate</b> 205:17	324:13,17 355:16 <b>related</b> 20:15 175:6 180:15 197:24 199:6 209:20 311:10 340:1 358:1 361:4 376:12 430:17 <b>relates</b> 1:6 14:20 18:3 30:23 32:19 35:3 36:2 167:16 188:10 190:19 204:17 226:4 226:14 232:22 237:6 243:17 253:14 282:16 284:5 285:2 310:6 314:10 324:12 341:4 367:3 368:3 371:23 374:12 375:4 465:8 <b>relationship</b> 7:7 126:22 254:19 257:9 259:16 296:15 302:22 352:13 383:22 429:9 445:7 <b>relative</b> 201:16 259:6 262:1,7 287:22 288:4,8 346:22,24 347:4,9 355:18 355:24 368:5 368:22 371:18 485:11,12 <b>relatives</b> 356:4 <b>released</b> 433:1 <b>relevance</b> 385:8 <b>relevant</b> 225:2 <b>reliable</b> 13:3 30:4,8 105:3 229:1 272:20 272:24 368:15 <b>reliance</b> 263:21	367:5,8 374:4 <b>relied</b> 87:17 91:21 127:13 161:10,11 174:9 450:11 451:9 470:4 <b>relies</b> 85:15 86:19 88:9 91:15 156:4 158:1 160:22 346:19 <b>rely</b> 26:14 73:11 73:18 76:15 87:4,11 96:18 96:23 158:7 172:16 173:10 208:22 217:21 218:3 337:7 380:24 467:23 <b>relying</b> 16:16,23 23:16 25:10,23 27:9 75:19 83:2,7 84:4,12 85:10,20,24 86:10,24 88:21 95:7 112:23 117:23 136:18 137:11,15 139:17,21 140:23 141:14 142:7,11,19 143:24 145:6 146:3 164:6,13 169:13 174:21 175:5,23 176:1 178:13,19,20 180:6 236:16 373:8,15,22 374:5 375:5 382:6 459:13 463:18 464:4 482:20 <b>remain</b> 8:10 295:2 <b>remaining</b> 38:12 <b>remains</b> 147:24 187:3 298:2
--	--	--	---	--



<b>remark</b> 239:15	36:3,13 53:6	316:12 333:6	<b>representation</b>	<b>researching</b>
<b>remember</b>	65:15 66:12,19	334:13 358:1	247:13	63:6
11:23 24:23	68:8,19,21	360:1 367:13	<b>representative</b>	<b>respected</b> 32:6
44:6,7 47:24	69:5,15,18,21	367:19 376:9	114:22	<b>respond</b> 26:22
65:3,8 90:13	70:12,13,17,19	380:7,13 384:4	<b>representing</b>	120:19 230:19
94:1,5,19	72:4,7 78:5	385:24 420:12	12:1	295:22
97:12 143:21	79:11,12 81:6	425:12 452:11	<b>reprint</b> 6:7	<b>responds</b> 108:24
155:14 172:9	81:15,20 90:6	452:14 468:6,8	<b>reproductive</b>	<b>response</b> 22:19
191:12 198:5	90:22 92:9	469:14,21	6:11 395:11	22:23 68:2
211:8 221:8	93:10 94:21	470:5 473:23	396:22 397:16	181:13 184:19
269:21 270:16	95:6,11,16,19	482:11,22,24	398:11,22	185:3,8 188:2
304:21 347:7	95:20 96:16	483:6,11	399:8 436:14	188:7 189:17
352:11 371:19	97:4,9,11,16	<b>reported</b> 124:15	436:19 437:15	189:22 209:22
383:4 399:5,7	98:7,18,19	211:6 216:13	437:15 438:18	210:2 211:24
423:22 464:1	99:6,9,11,14	268:6 291:6	439:22 440:22	212:1,9,14
469:10 481:6	100:15,20	292:7 294:21	474:3	214:14,20,24
<b>remind</b> 10:14	102:12 104:2,9	295:12 296:20	<b>reputable</b>	215:17 216:14
303:16	104:14,17	304:21 308:16	227:18 228:16	216:19 217:24
<b>removal</b> 473:7	105:7,10,12,17	308:23 309:1	229:19	217:24 218:5,6
<b>removed</b> 25:8	105:23 111:5	309:10,22	<b>request</b> 12:3	218:9,13 219:4
25:12 26:24	112:4,13 113:1	310:1,9 322:8	39:24 40:6	219:14 220:23
193:8 195:3	125:10,15,22	324:4 325:19	41:3 60:16	229:11,14
472:4 473:19	126:7 127:14	371:13	61:6,9 72:19	232:1 327:15
<b>renal</b> 160:20	128:14,21	<b>reporter</b> 1:17,18	74:24 92:7,21	329:8,10,13,19
<b>renee</b> 4:2	129:13 130:8	9:6 10:17	394:6	329:21,24
<b>reorient</b> 276:2	135:3 136:5,18	82:14 202:12	<b>requested</b> 65:19	330:5 331:21
<b>repeat</b> 24:20	137:1 155:12	242:20 430:5	66:2 72:23	333:7 334:11
107:19 275:22	171:21,22,23	460:10 485:3,4	75:4 395:11	337:20 367:5,9
340:22	172:11,14,15	485:17,18,18	396:21	367:11 399:12
<b>repeated</b> 26:20	172:17,18,21	<b>reporters</b> 461:2	<b>requests</b> 66:6	<b>responsible</b>
189:2	172:23 173:1,2	<b>reporting</b> 263:5	67:18 68:3	437:19
<b>repeating</b>	173:4,10	263:19 311:19	<b>required</b> 183:16	<b>rest</b> 290:2 311:3
165:13	174:10 175:17	<b>reports</b> 93:14	386:20 391:2	<b>restate</b> 151:1
<b>rephrase</b> 82:9	175:21 177:16	94:8,18,22	<b>rereview</b> 263:15	422:11
82:12 83:3	178:7 193:16	95:2 96:1,7,10	<b>rereviewed</b>	<b>result</b> 18:5
85:11 138:7	198:17 207:4	96:10,12,14,24	31:21	148:17 259:7
152:10 246:3	208:1,7 209:4	111:22 112:3	<b>research</b> 7:17,17	302:12 325:14
344:7	209:11 221:17	129:2 131:7	12:23 20:23	411:22,24
<b>rephrased</b> 138:6	222:19,21	137:6 138:22	31:2 32:5,9,16	438:19 474:3
<b>replacement</b>	234:16 242:12	139:18 140:22	56:5 64:12	<b>resulted</b> 324:7
273:19 356:21	245:17 246:2,6	143:19 227:4	220:2 222:7	448:4
369:3	255:14 259:14	262:13,23	223:11 224:5	<b>resulting</b> 412:9
<b>report</b> 6:14,16	260:3,4 261:13	292:14 374:7	395:21 478:9	<b>results</b> 106:11
13:16 14:21	263:11 264:12	375:13	479:22 480:5	114:15 115:5
15:2 16:19,22	264:17 270:12	<b>represent</b> 9:17	480:12 481:9	118:19 140:9
17:3,7 25:15	286:10 289:15	128:21 140:8	<b>researched</b>	145:19 146:14
25:16 32:20,21	290:21 297:7	388:20	106:7	146:24 153:4

211:13 212:2	271:22 278:8	393:10,12	113:6 114:7	310:1,10,13
246:18 255:12	278:16,17,21	<b>reviewers</b>	115:19 120:8	316:1,8 318:13
258:21 259:11	279:5,18,22	278:24 392:14	121:11,21	320:3 321:7,13
262:17 275:6	281:1,19,21	393:8	123:15 126:8	322:3 324:5,14
277:11,16	285:20,24	<b>reviewing</b> 20:21	127:14 129:24	330:5,11,16,24
303:9,17 305:2	286:8 289:6	56:18,21 57:19	131:22 133:13	331:9,20 332:5
306:17,18,23	303:24 306:21	58:5 59:7,12	134:18 141:9	333:8,14,20
312:4 313:12	313:16 329:6	59:19 60:9,14	142:16 143:15	334:16 335:4,8
314:7,7,17	338:1,9 349:10	62:10 71:8	145:20 146:20	335:19 336:13
341:21 448:15	349:15,19	72:3 108:14	148:19 159:8	344:22 345:24
448:19,23	357:7 360:1,8	109:8 124:6	159:13,23	347:19 348:22
<b>resumé</b> 54:12	362:9,11	152:20 173:4	170:16 172:11	349:20 351:9
<b>retail</b> 406:5	364:15 368:4	187:16 250:9	182:14 184:23	352:1 353:5,18
<b>retained</b> 389:18	369:7 382:12	257:18,22	185:8,21 186:4	355:6,7,11,18
<b>retrograde</b>	385:23 389:10	306:19 312:6	186:15 187:17	356:1,5 357:9
192:10 223:22	391:16,19	348:19 349:24	187:24 188:3,7	358:5,8,23,24
227:10,21	392:11,16	383:14 469:23	189:18 190:11	359:7 362:15
228:12 430:2,9	398:17 446:11	<b>reviews</b> 17:5	190:21 193:18	363:11,16,21
430:20 440:3	455:24	19:4 136:24	193:23 195:24	366:18 367:5
<b>retrospective</b>	<b>reviewed</b> 12:20	141:12,24	196:10 197:20	367:15 370:11
7:5 254:1	18:2 29:16	144:5 202:17	198:19 199:17	370:18 372:17
<b>retrospectively</b>	34:9,13 35:18	203:5 208:6	200:23 202:3,9	374:15 375:1
28:23	35:21 57:10	216:2 233:5	207:19 209:7	376:19 377:7
<b>revealed</b> 117:15	60:15,20,24	247:18	214:15 215:2,5	380:10 383:12
415:24	61:4,14,20	<b>revising</b> 392:22	219:21 221:21	384:8,17
<b>review</b> 7:22	62:4 76:13	<b>revisions</b> 97:24	221:24 226:14	387:18 398:23
12:21 31:2,17	81:23 90:5,15	<b>riding</b> 195:18	227:11,18,22	399:15,16
31:23,24 34:2	91:14,16,17,18	436:16	228:22 229:11	413:11 423:23
35:7 56:22	93:19,24 94:2	<b>right</b> 14:19,22	231:1,15 232:8	424:6 425:9
62:7 73:4	120:2 136:4	15:4 17:19	233:12,17	432:23 442:12
75:12 79:19,22	141:17 154:13	19:2 21:14	236:9 237:23	448:10 464:17
80:20 81:16	155:15 157:21	24:7,17 25:19	238:14 239:8	465:5 468:6
84:23 90:10,18	158:14,18	28:13 34:18,20	239:19 240:1	472:23 475:20
91:10 124:1	188:10 224:10	35:24 37:4	240:11,15	481:23 483:8
128:24 129:9	224:10 225:23	38:19 42:8,9	252:12,12	<b>righthand</b>
135:10 136:17	228:8 233:6	44:24 49:13	266:24 274:7	425:24 429:7
141:20,22	256:5 271:18	50:1 51:22	275:20 276:13	<b>rigler</b> 112:17
154:15 155:8	282:20 308:11	54:3 55:3 63:2	276:15,20	125:15 373:20
155:10 157:5	312:23 357:19	64:24 66:8	279:6 282:12	373:22 452:23
172:23 178:6	361:11,16,17	69:6 73:19	285:4 288:1,21	453:16,19
197:15 227:5	365:7,13,14,17	74:4 93:16	289:16 292:4	463:12
229:1,14	366:24 374:3	94:10 95:8,20	293:13,22	<b>riglers</b> 452:11
231:24 232:18	384:10 391:11	96:3 98:15	294:2 297:1,10	452:14
234:7,9 235:8	391:12,23	99:15 101:13	297:23 301:21	<b>rio</b> 471:16,23
235:23,24	394:4 450:17	103:5,18 105:4	305:7,22 306:6	<b>risen</b> 361:23
238:16 245:5	451:8 476:12	105:8,13,15	306:12 309:1	<b>risk</b> 8:5,11,12
247:7 255:10	<b>reviewer</b> 392:4	111:1 112:10	309:11,23	18:4 19:12,19

31:10 43:6	359:17,17	420:22	416:5 420:14	447:21 448:16
45:6 56:3,7,24	360:22 361:7	<b>ruled</b> 284:23	448:18,20	448:22 467:17
57:23 58:23	368:5,22 369:2	314:1	459:7,14,22	<b>scar</b> 408:18
62:7 64:23	369:4 371:4,10	<b>rules</b> 10:12	460:6,9,20	<b>schildkraut</b>
65:6 90:7	371:18 376:10	83:12 84:9	<b>samuel</b> 7:15	234:18,18
108:21 110:4	376:24 385:8	87:2 88:11	<b>san</b> 2:15	235:9 239:17
138:15 152:24	387:16,24	299:19 300:19	<b>save</b> 143:11	239:23 240:6
153:11 154:11	401:1 404:20	389:23	<b>saw</b> 11:22 113:1	241:19 278:12
160:14,18,19	405:6 422:17	<b>ruling</b> 206:14	125:3,3,6	280:8 293:16
163:23 164:23	422:23 423:5,9	<b>rung</b> 383:17	126:2,11	297:17 302:3,7
164:23 165:18	438:5 446:22	<b>running</b> 28:12	130:19 155:12	302:11 303:5
166:7,10,15	446:24 447:2,5		173:2 198:3	304:1,16
167:1,19	447:8,11	<b>S</b>	215:11 268:4	305:11 306:4
169:17 174:15	472:11,11,13	<b>s</b> 2:1 3:1 4:1 7:9	350:7 399:9	311:11 329:22
176:4,9,16	472:24 473:5,9	<b>sacrificed</b> 410:5	414:23,24	451:3,15
179:24 180:9	<b>risks</b> 6:9,21 7:12	<b>saed</b> 35:17 36:4	432:13,13	<b>school</b> 130:3
181:17 190:5	8:21 287:22	219:20 235:4	<b>saying</b> 29:12,13	133:21
195:5,24 196:9	288:8 328:7	235:13 381:1	34:7 60:14	<b>science</b> 29:6,23
197:3 200:22	346:22,24	392:4 393:6	92:13 125:5	<b>sciences</b> 6:11
201:16 202:21	347:4,9	394:4,24	146:16 162:9	398:11,22
203:22 204:10	<b>road</b> 188:23	395:15 398:5	176:16 177:15	399:8
205:4 208:14	<b>robert</b> 480:10	478:5 479:21	191:5 208:10	<b>scientific</b> 25:23
219:9 234:20	<b>robinson</b> 2:8	480:21 481:3	208:19 213:3,4	26:13 27:8,21
234:24 241:6	<b>robinsonfirm</b>	481:16 482:2	222:10 242:7	27:22 30:17
241:23 248:19	2:9	<b>saeds</b> 219:16	282:24 298:8	32:11 104:24
249:20 251:21	<b>robust</b> 221:18	220:15,20	325:6,11 397:7	162:14,22
259:6 262:1,7	<b>rohl</b> 143:1,5	380:21 381:4	397:8 403:11	163:14 165:5
265:8,10,16	145:6,19 146:4	381:24 382:5	403:13 407:9	166:12 167:20
266:17 267:10	146:14,24	382:11 391:5	459:14	168:21 169:14
267:15 270:15	147:20 148:10	393:3 394:10	<b>says</b> 27:17 68:19	174:22 175:11
271:4 273:7,13	148:16	395:5 397:16	86:13 91:5	176:10 177:3
274:1,6,17	<b>role</b> 174:19	425:10 480:9	99:15,18	179:11 183:20
275:5 277:9	177:18 179:23	<b>safe</b> 109:19	110:10 119:2,4	192:21 194:8
282:5,12 288:5	220:17 399:14	110:8,11	119:16,24	206:19 208:2
290:9,23	434:3	151:20 183:1	161:5 169:5	279:17 328:10
291:17 293:21	<b>room</b> 475:20	183:18 184:11	175:6 177:16	336:4 337:6
295:3,5 298:17	476:14	184:12	179:18 203:15	386:24
298:21,22,23	<b>route</b> 346:12	<b>sales</b> 1:4	222:3,11 225:8	<b>scientifically</b>
298:24 317:17	<b>routes</b> 456:16,22	<b>sample</b> 122:11	228:17 233:22	105:3
327:20,21	<b>routine</b> 263:14	151:3 153:19	262:2 295:2	<b>scientist</b> 244:2
328:4,6 330:10	350:6	154:8 170:5	306:20 308:1	415:9
331:2,4,13	<b>routinely</b> 133:7	415:14,24	351:22 363:24	<b>scientists</b> 30:14
337:11,15	133:11 206:14	418:10 419:3	391:15 394:20	32:10 286:22
338:3 339:19	272:18 390:9	<b>samples</b> 123:13	394:23 395:13	361:10 364:18
352:15 354:24	398:13,17	125:3 133:15	396:5 397:2	395:11 396:22
355:3,9,12,16	<b>rule</b> 6:14,16	135:7,11,22,23	419:3,13,18	397:16
356:12,16	84:20 307:14	136:5 137:12	425:24 431:12	<b>score</b> 31:2

241:24 284:17 <b>screen</b> 23:20 <b>screening</b> 45:16 472:23 <b>scully</b> 3:11 <b>search</b> 13:12 91:7 <b>searching</b> 14:5 <b>second</b> 17:3 23:12 112:5 117:10 141:23 159:1 169:2 208:5 210:22 218:14 252:19 258:5 266:7 294:3 306:17 306:22 310:21 342:17 355:20 388:6 418:23 443:20 452:9 460:11,22 461:15 <b>secondarily</b> 220:24 381:23 <b>secondary</b> 257:10 293:15 409:1 <b>section</b> 68:19 218:16 225:1 258:9,12 277:19 278:22 278:24 306:23 320:18 355:4 449:16,20,24 450:17 <b>sector</b> 351:13 <b>see</b> 21:3,4,6 23:22 28:7,23 31:23 37:5 48:9 51:2 53:18 62:19 72:13 79:14 91:7 93:20 94:22 95:1 96:13 98:1,14 99:16,22 101:24 102:9	102:15,18 103:1,4,8,12 103:12 105:20 112:19 113:9 113:21 114:2 115:4 118:22 118:22 120:6 129:12 133:4 135:20 137:3 143:10 168:20 171:22 172:13 172:14,20,24 181:16 188:6 198:1 201:1,2 202:21 213:4 216:18 218:9 218:12 224:10 226:7 227:4 230:17,18 244:22 245:15 246:14,16 247:19,23 250:7 254:3,4 262:2 263:1,22 272:10 275:8 275:12 278:5 279:1,3,11 291:1,8 295:24 301:15 303:21 304:24 305:1,3 306:20 307:3 307:21 309:5,6 309:19 310:16 319:14 330:10 353:8 370:4 383:6 386:20 391:14 394:19 401:2,4,6,8 415:22 418:6 419:2,6,7 424:14 425:23 426:8,18 429:14 439:9 445:6 450:7 454:3 455:8 478:22 <b>seeing</b> 169:8	228:11 343:15 347:8 <b>seen</b> 11:18 37:23 55:1 58:7 93:14 97:1 111:5,13,16,22 131:7,8,17 134:13,23 135:3,19 182:15 190:4 287:22 375:12 375:13 378:22 379:22 382:13 387:14 393:11 393:15 410:7 410:12 413:2 438:2 440:15 445:1,4 476:1 476:11,16 477:20 <b>segments</b> 55:3 <b>select</b> 79:18,22 80:20 414:20 <b>selecting</b> 251:15 <b>selection</b> 99:20 <b>selfreported</b> 328:23 <b>selfreporting</b> 329:2 <b>sell</b> 406:11 <b>sells</b> 146:22 <b>sem</b> 133:23 <b>seminars</b> 63:17 <b>send</b> 39:16 96:9 <b>senior</b> 220:22 <b>sense</b> 337:21 341:8,15 443:4 <b>sensitivity</b> 327:20 335:24 <b>sent</b> 37:18 40:1 96:6,10,11 393:6 <b>sentence</b> 99:16 100:2 101:12 103:13,15 222:3,11 232:7 233:23 310:21	448:22 449:5 <b>sentences</b> 102:18 103:4 <b>separate</b> 72:5 153:17 166:8 382:13 402:11 <b>separated</b> 247:20 250:7 <b>separately</b> 113:11 153:1 157:10 247:22 248:13,14 <b>separating</b> 270:7 <b>series</b> 451:22 473:23 <b>serious</b> 384:16 <b>serous</b> 238:5,8 240:22,24,24 241:15,20 242:5,11 243:10 247:20 247:22,23 248:10,12,13 249:16,20 250:3 <b>served</b> 66:5 <b>services</b> 4:8 <b>set</b> 47:5 71:6 398:16 414:9 414:19 485:9 <b>setting</b> 42:17 <b>seyfarth</b> 4:2,3 <b>sgo</b> 36:12 360:19 360:23 361:5 361:10,19 362:3,9 364:19 365:6,18 366:3 <b>shake</b> 107:7 110:13,13,14 <b>shakes</b> 110:13 <b>shane</b> 4:7 <b>share</b> 37:7 370:1 384:14,23 <b>shaw</b> 4:2 <b>sheds</b> 439:23 <b>sheet</b> 486:7	<b>shelf</b> 134:12 136:15 405:23 <b>shell</b> 231:21 <b>shes</b> 24:9,9,11 42:9 52:7 68:5 82:18 85:10,19 85:20,24 86:23 87:14 92:13,14 102:19 120:19 172:4,5 190:13 195:4 203:13 206:4 269:7 295:20 299:14 300:15 301:2 312:22 472:13 479:16 <b>short</b> 99:21 185:19 257:6 266:6 267:1,22 267:23 410:5 <b>shorten</b> 448:18 <b>shorter</b> 243:19 326:18,23 <b>shortest</b> 267:1 <b>shortly</b> 65:20 <b>shot</b> 310:12 <b>shouldnt</b> 342:20 343:15 345:8 <b>show</b> 28:2 115:5 117:8 119:2 128:9 159:24 194:9 195:23 201:15 203:21 211:7,15,16 212:14,22,24 223:21 230:14 230:22 231:8 231:10 240:12 251:20 265:3,4 282:7 291:17 329:9,21 330:4 345:21 374:19 411:2 415:15 423:4,7 434:17 468:23 473:22 474:7 <b>showed</b> 114:15
---	---	---	---	--

125:4,6 142:22	249:11,15,19	375:15 464:12	102:12 104:5	255:20,22
242:11 254:19	250:3 251:20	477:17	112:5 117:13	289:12 291:12
264:9 282:5,12	266:16 267:4	<b>sixth</b> 27:13	117:14 129:6,7	340:15 359:17
314:7 329:23	268:4 290:17	<b>size</b> 199:3 289:3	141:10 149:20	393:16 452:24
330:6	293:18 297:20	290:14	174:11 206:13	453:1
<b>shower</b> 420:15	304:19 305:1	<b>skills</b> 46:5	214:4 216:3	<b>specifically</b>
420:15 447:18	306:11 307:1	<b>skin</b> 205:22	224:20 225:6	19:18 20:13
447:18 458:6,7	307:21 308:5	<b>skip</b> 388:24	225:15 236:3	31:20 48:9
474:1,2	308:10 311:18	<b>skipping</b> 100:4	249:22 250:15	56:7 75:3
<b>showing</b> 106:16	313:21 314:8	<b>slide</b> 21:8	302:10 309:18	78:20,24 81:9
288:15 290:22	314:20 315:1	212:24 218:8	320:13 356:22	114:4 129:21
473:24	317:17 324:8	<b>slides</b> 212:19	367:2 378:2	140:6 142:18
<b>shown</b> 26:7	331:13 369:17	445:4,5	380:17 393:14	143:8 145:2
204:24 234:24	374:20	<b>slight</b> 331:2	416:11 422:13	152:21 153:8
241:13 288:8	<b>significantly</b>	379:20	429:11 438:12	162:19 163:9
290:16 421:17	202:21 238:4	<b>small</b> 47:14	447:7 460:12	166:17 182:24
422:1,22 434:5	240:21 307:7	68:14 138:17	460:14,24	208:8 240:19
446:4 449:10	311:8	151:13 202:9	461:3 472:18	248:10 249:14
<b>shows</b> 64:1	<b>signs</b> 339:21	241:16 293:1	472:19	251:23 252:7
147:15 159:17	<b>silver</b> 3:16	369:8 375:13	<b>sort</b> 38:13 42:19	257:23 271:1
196:9 205:3	424:15,21	<b>smaller</b> 457:1	65:18 68:18	286:17 293:17
220:22 242:9	<b>similar</b> 32:3	<b>smith</b> 6:16 98:21	316:18 366:16	295:9 313:3,5
265:8 266:16	38:9 94:3	98:23 99:2,6	382:20 383:3	354:5 389:17
267:14 336:5	102:16 106:16	99:10 100:14	440:24	400:4 432:3
342:9 378:22	259:6 331:6	100:17	<b>sound</b> 358:5	434:9
381:9,24 474:8	<b>similarly</b> 217:7	<b>smiths</b> 99:11	<b>sounds</b> 136:8	<b>specifics</b> 313:7
<b>shrouded</b>	<b>simply</b> 361:11	100:20	364:2,6	<b>specimen</b>
350:11 351:23	413:11	<b>smoke</b> 166:24	<b>source</b> 13:3 33:1	212:17,18
<b>shuklas</b> 220:16	<b>simultaneous</b>	167:2	76:11 105:3	213:5 218:15
<b>shut</b> 51:5,9	82:13 202:11	<b>soaps</b> 15:21	119:17 135:20	<b>specimens</b>
<b>sic</b> 395:11	242:19	<b>social</b> 42:17	204:8 272:20	214:20 379:3
396:22 397:17	<b>sinai</b> 120:8	462:19	272:24 379:10	<b>spectrum</b>
<b>side</b> 87:19 95:23	<b>single</b> 76:11,11	<b>societies</b> 361:19	396:10	404:15
349:3 390:4,16	267:13 410:6	365:1	<b>sources</b> 14:11	<b>speculate</b>
419:12	415:14 442:16	<b>society</b> 364:12	104:11 114:13	418:17
<b>signature</b>	473:22 475:1	<b>sold</b> 148:2	136:23	<b>spend</b> 97:16
344:15,18	<b>sister</b> 236:24	405:22	<b>south</b> 318:20	173:3 203:11
<b>signed</b> 352:4	237:3,7,8,15	<b>sole</b> 420:22	<b>soybeans</b> 435:3	<b>spending</b> 59:18
<b>significance</b>	257:6	<b>somebody</b>	<b>speak</b> 20:9	<b>sperm</b> 192:6
241:18	<b>sit</b> 326:10	115:18 190:16	54:11,21 64:8	<b>spoke</b> 64:13
<b>significant</b>	475:20	208:12 326:10	64:14,19	478:4,5 479:12
103:14 159:20	<b>site</b> 260:8	326:13 328:1	100:16 134:15	481:8
160:1,6,12,24	375:16	335:7 350:7	<b>speaking</b> 219:20	<b>spoken</b> 56:10
163:23 164:7	<b>sites</b> 148:24	<b>somethings</b>	<b>specific</b> 64:18	462:23 480:13
165:3 200:21	<b>sitting</b> 42:9 76:1	195:14	107:17 122:13	<b>sprays</b> 15:16
237:9 238:10	77:9,18 81:14	<b>sorry</b> 67:10	154:8 219:8	<b>spring</b> 364:11
240:13 242:5	93:5 365:23	79:12 95:21	226:21 231:7	<b>square</b> 3:8



<b>staff</b> 46:19,20 <b>standard</b> 187:3 263:14 <b>standing</b> 478:22 <b>starch</b> 407:23 <b>starchbased</b> 407:16 <b>start</b> 9:17 14:4 70:10 87:3 224:18,24 315:18 319:4 320:22 321:15 323:10,19 355:8 460:23 <b>started</b> 45:8 47:10 53:9 56:18 72:6 106:4 201:10 217:11 315:24 316:4 317:8 318:12,16,18 318:21 323:15 325:15,17 348:13,14,17 348:19 349:8 <b>starting</b> 11:24 13:6 <b>starts</b> 324:24 440:19 441:8 <b>startup</b> 48:21 <b>state</b> 1:19 66:4 180:14 184:6 221:16 255:14 289:14 290:20 355:11 381:22 382:2,3 448:11 480:2,7 <b>stated</b> 80:1 171:18 198:17 223:15 319:3 333:24 395:12 <b>statement</b> 39:2 41:10 83:23 142:20 230:1 230:24 254:13 256:22 259:13 259:16,18,22	261:19 350:17 363:15,23 365:21 <b>states</b> 1:1 7:6 49:8,15 124:19 449:2 <b>statistical</b> 238:4 240:21 241:17 242:13 259:4 290:16 297:20 305:1 308:16 <b>statistically</b> 160:1,6,11,24 163:22 200:21 237:9 242:5 266:16 267:4 268:4 306:11 307:1,17,20 308:4,9 311:8 311:17 314:8 314:20,24 317:16 369:17 <b>statistician</b> 262:3 <b>stay</b> 84:8 87:23 <b>stays</b> 22:12 <b>steering</b> 2:6,11 2:16 <b>stenographica...</b> 485:8 <b>stenosis</b> 193:6 <b>step</b> 169:20 324:20 362:10 388:1 <b>steps</b> 361:21 <b>steven</b> 7:15 <b>stick</b> 294:11 <b>sticker</b> 113:14 <b>stimulation</b> 381:23 <b>stop</b> 21:23 59:4 195:20 348:18 350:9 <b>stopped</b> 16:15 <b>stopping</b> 17:24 <b>stored</b> 135:24 <b>stores</b> 406:5	<b>straight</b> 86:16 <b>strategies</b> 8:16 351:2 <b>stratified</b> 258:19 309:7 <b>street</b> 1:15 2:4 2:19 4:3 <b>streets</b> 474:17 <b>strength</b> 226:3 367:23 368:3 <b>strengths</b> 270:8 <b>stress</b> 380:20 384:6 385:15 <b>stretched</b> 388:2 <b>stretchedout</b> 387:2,8 <b>strike</b> 56:10 149:15 284:8 <b>stroma</b> 457:3 <b>stromal</b> 241:11 <b>strong</b> 226:9 368:13 <b>stronger</b> 160:11 <b>strongly</b> 159:5 426:4 428:24 <b>structures</b> 448:17 <b>studied</b> 29:6 152:15 192:7 199:8,17 243:19 244:4 256:13 412:14 412:18 413:5 421:6 432:12 438:2 439:14 <b>studies</b> 14:13,14 14:14 18:13 21:20 27:22 28:1 56:20 99:19 100:7 101:14,23 102:7 103:17 106:8,8,8,10 106:15 108:15 110:12 147:10 152:11,16,20 153:5,9 157:5	157:24 158:18 159:6,24 160:21 161:7 164:8 165:3 168:21 169:4 179:11 192:16 193:17,20 194:1,3,15,18 195:23 196:14 197:10,14,17 199:5 200:4 204:23 217:13 217:17 219:5 227:5 234:16 235:7,20 236:17,23 237:11 238:3 238:11 240:16 240:21,23 241:1,14,14 242:4,14 244:13 245:8 245:19 246:8 247:21 249:10 249:15 250:5,8 250:12,21 251:4,12 253:16,24 254:2,6,14,16 254:19 255:3,6 255:15 256:4 256:10,14,20 256:22 257:2,3 257:11 258:18 258:21,23,24 259:1,5,8,9,14 259:23 260:21 261:14 262:11 262:23 263:4 265:21,24 266:4,15,22 267:21 275:6 277:17 282:4 282:11 287:9 287:11,23 288:4,9,21,24 289:8,10,11,15	289:19,20 290:8,12,22 291:6,8,16,17 291:21 292:2 293:3,12 311:16,21,22 313:16 315:24 316:17 317:22 318:3 325:19 329:17 330:3 338:10,13 341:22 345:21 346:19,23 368:10 369:8 370:11 383:10 383:22,23 385:1,13 387:23 406:20 412:15 413:2 413:12,17,22 413:24 422:5 422:14 423:3,7 423:14 426:5 428:24 434:16 434:22 442:23 456:12 468:23 469:3,13 470:2 470:9,15 <b>study</b> 7:6,20 28:6,14,18 29:11,12 108:6 116:16 146:14 159:17 168:2 169:8 179:17 192:19 199:2,4 199:15,19 200:8 203:12 209:7,20 214:12 234:19 234:24 236:5 236:24 237:3,7 237:8,15,16 238:13 239:18 241:19 242:12 243:6 244:20 244:23 245:21 246:2,10,13,14
---	---	---	---	--



246:20 247:5	<b>subject</b> 12:20,21	<b>suggesting</b>	384:3,4 386:24	23:13 24:23
247:22 248:9	31:24 312:12	45:10 69:13	395:20 418:2	25:2,8,12 26:1
248:11 249:12	312:19	173:22 177:20	475:16	26:7,15 27:1
249:17,24	<b>submit</b> 360:2,7	353:11	<b>supported</b> 29:23	27:10,17 28:3
250:14,22	392:19 471:13	<b>suggestion</b>	457:9	28:18 29:19
251:16 252:4	<b>submitted</b> 39:9	29:10 40:12	<b>supporting</b>	30:24 407:19
254:21 255:1,7	39:20 91:5,6	454:16	121:5 221:18	454:14,17
256:24 257:6,7	94:18 96:1,12	<b>suggestions</b>	<b>supports</b> 146:17	<b>surprise</b> 437:9
257:8,10	233:15 391:18	392:22	209:16 363:20	437:10
258:19 259:17	391:22 448:20	<b>suggests</b> 58:22	385:2 412:13	<b>surprised</b>
259:22 260:12	471:9	148:24 163:20	<b>supposed</b> 346:7	100:18 129:22
260:19 261:20	<b>subscribed</b>	197:2 219:5	<b>sure</b> 23:1 24:10	<b>surprising</b>
263:10,21	486:15	254:18 412:13	28:16 29:4	101:20
265:13 266:8	<b>subsequent</b>	439:10	32:24 79:9	<b>survey</b> 168:19
267:3,14 270:7	19:21 38:8	<b>suing</b> 357:20	80:23 82:17	448:16
270:9 281:22	<b>substance</b>	<b>suite</b> 2:14,19 3:8	86:18 92:10,12	<b>susceptible</b>
292:3,4,7,23	194:23 195:9	3:12,21	103:11 107:21	337:8,10
292:24 293:9	286:23 455:11	<b>summary</b> 33:9	108:6 116:12	<b>suspect</b> 167:7
293:16 295:4	458:11 478:7	100:5 260:4	119:15 120:7	178:8
295:12 296:13	479:20 486:7	278:23 420:11	120:21,23	<b>suspected</b> 22:5
296:19 297:17	<b>substances</b>	<b>supplemental</b>	121:1,5 128:12	338:19
297:17 301:24	194:18 221:11	91:11,15,20	189:12 204:3	<b>swear</b> 9:7
302:3,20,21,24	283:19 284:5	92:1,7,11,18	205:16 231:21	<b>sweating</b> 318:22
304:13 311:4	402:9 404:10	92:20	232:3 236:14	<b>sworn</b> 9:9 485:5
313:8,19 317:3	443:3 458:12	<b>suppliers</b> 448:20	244:2 251:9	486:15
318:5,8 319:1	458:13 467:13	471:8	262:4 267:8	<b>symposia</b> 63:17
319:8 321:3,10	467:16 468:24	<b>supplies</b> 416:15	275:24 295:8	462:24
321:19 322:23	<b>subtracted</b> 72:9	<b>support</b> 25:24	313:11 317:7	<b>symptoms</b> 45:16
323:13 329:4	<b>subtype</b> 240:1	27:8,21 143:24	326:4,21	56:4
329:21,22,22	<b>subtypes</b> 241:13	145:7 146:4	327:14 334:1	<b>syndrome</b>
340:8 346:8	241:16,21	158:7 160:22	342:2 343:20	337:14
371:17 384:7	<b>successor</b>	163:15 164:9	344:3 346:6	<b>synergism</b> 167:8
384:11 385:8	471:16	165:5 166:12	360:9 366:11	<b>synergistic</b>
385:11 409:21	<b>suffering</b> 186:18	167:20 169:14	370:24 371:22	166:5 167:4,5
410:7,11	<b>sufficient</b>	174:22 175:12	375:16 376:16	<b>system</b> 108:23
433:11,17	283:20 284:10	176:3,10 177:2	378:21 407:7	195:2 457:4
435:23 436:7	409:7	177:8,9 178:14	415:21 444:9	<b>systematic</b> 7:22
437:24 438:3	<b>sugar</b> 432:23	179:4 180:6	444:13 466:14	
442:16 451:15	433:2	182:15 183:21	470:2 476:1,8	<b>T</b>
469:5 473:23	<b>suggest</b> 28:1	192:21 193:17	<b>surgeries</b> 408:4	<b>t</b> 406:23
473:24	29:5 40:18	206:18 208:1	<b>surgery</b> 28:24	<b>tabbed</b> 68:16
<b>studying</b> 193:21	160:15 220:17	208:21 209:12	408:8 409:2	<b>tabbing</b> 68:17
220:4	261:1 280:3	214:7 232:4	411:6,6,13,18	<b>table</b> 85:23
<b>stuff</b> 404:15	387:15	234:11 275:3	411:23 412:10	240:1 241:21
<b>subgroup</b> 239:3	<b>suggested</b> 21:21	277:7 311:4	413:13 473:7	245:8 303:19
248:3 303:4	62:6 438:3,23	373:16,23	<b>surgical</b> 22:4,11	304:24 305:7
305:7 317:11	448:2	374:8 382:7	22:18 23:3,8	308:20 330:9

330:22 332:1	49:24 50:5,10	254:8 257:9	442:16 443:4	17:21 24:22
332:11 349:3	56:15 76:6	259:3 265:17	443:13,14,17	25:2,4 28:2,3
483:4,11	106:20 108:21	271:18 274:14	447:10,21	43:7 45:7
<b>tabs</b> 68:21	109:3,14 111:1	275:4,21 276:5	448:3,14,20,24	54:14,17,22
<b>taher</b> 90:16,16	111:2 112:17	276:24 277:8	449:16,21	55:6 56:15,23
90:22 91:2,10	117:12 118:24	277:19 280:17	450:13 452:2	57:4,5,14,16
91:15,21 92:2	119:20 128:20	280:21 281:1	453:21 454:8,9	57:23 58:2,10
92:8,13,14,16	135:22 138:20	281:22,24	455:1,3,14,17	58:12,21,23
281:17	140:16 141:5	284:8,11,15,16	455:22 456:2	59:8,11 60:6
<b>take</b> 11:6 27:24	141:21 142:9	284:16 285:13	456:17 457:15	61:5,11,15,23
42:22 44:4	153:13 161:21	285:13 289:3	457:19 459:2,4	62:3,24 64:9
59:15 72:2,5	162:6 164:14	290:15 302:5	459:8,16,19,23	64:12,15,19
72:10 85:7	164:15 168:8,8	309:22 310:1	460:5,8,16,20	67:2,13 106:5
86:8,15 88:6	170:3,3 179:2	310:10 315:14	462:14,20	106:22 107:12
88:16 89:14	179:2 184:14	328:12,22	463:1 465:10	107:24 108:9
99:13 104:3	184:18 185:6	329:6 336:17	465:10 466:10	108:11 109:22
112:8 118:20	185:10,21	340:11 341:5,6	466:16,19,19	110:2,17,19,24
128:23 129:9	186:3,11 187:2	342:18 358:21	467:6,6,9,9	111:8,12,15,18
139:5 196:17	187:10,15,17	359:3 362:20	469:10,15	113:18 114:12
198:7,9 210:5	187:22 188:1	366:4 372:1,9	471:4,8,14,24	119:9 120:11
210:11 211:5	188:11,14,20	372:9 375:5,6	472:5 473:11	121:6,20
211:16 213:7	188:24 189:2,5	375:10,11,17	473:17 474:10	126:23 135:21
245:6,12	189:7,16 190:9	375:19,20	474:18,21	138:16 139:16
254:24 256:9	190:16,20,23	377:14,14	475:4,10 477:3	140:24 142:20
315:5 325:12	190:24 191:1	378:14,14	480:18	143:5 144:7
327:23,24	191:11,23	379:1,2,7,7	<b>talcbased</b>	145:9,11,16
359:24 364:14	192:1,18	381:2,6 382:7	399:14,22	146:12,22
418:7 432:19	199:10 204:7	382:14 385:1	400:18 401:13	147:16 148:13
466:4 475:1,8	204:13 206:20	388:20 389:11	401:24 405:3	148:24 149:5
<b>taken</b> 1:13 28:5	207:1 211:7	389:14,19	405:11 415:16	149:12 151:4
35:24 89:19	212:9,12,13,16	395:6 397:14	420:23 433:8	151:24 152:6
139:8 168:2	213:1 214:8,13	399:16 400:3,3	434:13 435:17	152:15,22,24
213:13 252:22	214:24 215:12	400:15,15	436:12 437:2	153:3,10,18,23
315:8 378:5	215:16 216:14	401:5,8 404:3	437:18 471:5	154:6 161:15
388:11 444:3	216:19 217:14	404:5 405:13	<b>talccontaining</b>	162:3,9,18
445:19 461:18	217:16,22	406:11,14	448:24	163:3,10 164:2
485:8	218:4,4,8,11	408:20 409:7	<b>talcdusted</b> 16:10	164:3,10,19
<b>takes</b> 217:22	219:17 220:6,9	409:13,17,21	18:5,14 19:13	165:16 166:15
325:20 326:12	220:23 221:6	410:8 415:14	195:23 196:8	167:17 169:16
361:19	224:23 225:22	416:5,15,19,20	197:8	169:22 170:15
<b>talc</b> 3:14,18 6:12	225:22 227:10	417:1,2,6,19	<b>talcs</b> 471:17,21	170:19 171:1,6
6:18 7:5,8,8,13	229:2,4,15	418:5 424:10	474:13	171:9 173:18
7:21 8:4 17:8	230:7 232:5,22	424:12 429:10	<b>talcum</b> 1:3	176:22 177:21
17:15 19:15	233:16 235:22	429:23 430:9	13:24 14:22,23	178:15,22
20:8 22:11,18	237:6 244:11	430:20 431:2	15:6,7,9,11,17	179:1,23
23:2,7 28:3	248:19 249:9	436:11,12	15:22 16:1,3,5	180:17,23
43:5 44:12	253:15,22	441:10,11	16:7,12 17:1	181:4,11

190:17 191:7	352:10 356:13	367:20 440:4	133:23	175:18 178:1,9
191:11,14	356:17,19	443:5 447:13	<b>ten</b> 69:12 79:6	374:21 379:2
193:21 194:9	357:2,11,21,24	461:6 479:20	210:14,15	415:14 417:20
194:17,18	359:14,22	480:1,11	299:9 300:7	418:10 448:18
196:24 197:3	361:6,12 362:5	481:10	316:9 317:1	448:21 459:7
199:6 200:23	362:13 363:16	<b>talking</b> 17:7	322:3 325:2	459:21 471:4
201:10,22	363:20 368:6	24:22 28:12	<b>tenens</b> 46:4	471:17
202:7 205:5,12	371:24 372:6	42:24 45:8,20	<b>tenets</b> 288:16	<b>testified</b> 9:11
205:19,20	374:8,14,20	102:11 107:21	333:17 366:22	221:5 385:22
206:2,7 207:16	376:6,23	119:23 127:5	<b>term</b> 133:6	442:15
208:3,13,23	377:19,23	131:21 162:3	344:17	<b>testify</b> 85:19
209:2,5,10,12	378:13,18	196:6 209:6	<b>terminal</b> 188:21	87:15 95:13
209:13,17,21	379:11,13,17	217:12 229:9	<b>termination</b>	135:18 401:18
220:18 221:14	380:8 381:2,6	231:5 232:11	10:3	485:5
234:20,22	381:7,11,15	232:15 240:17	<b>terms</b> 80:19	<b>testifying</b> 23:12
237:19 241:5	384:5 385:3,13	240:20 321:8,9	86:2 115:14	24:17 127:16
251:22 264:10	404:21 409:20	340:17 342:14	116:2 126:14	390:17 400:11
267:5,15 268:5	423:8 447:14	342:15 349:2	134:12 152:3	<b>testimony</b> 24:6
274:1 280:13	447:15 448:2	383:9 476:15	190:8 223:10	27:4 35:5 57:8
281:9 282:5	456:18 458:1,5	<b>talks</b> 20:13	226:9 250:12	62:22 76:20
290:4,24	458:6,10 459:6	<b>tampons</b> 16:2,7	274:6 374:23	77:12 80:7
292:14,20	461:7 464:21	436:17 438:9	446:22 452:24	98:13 121:13
293:21 294:23	465:16 466:3,5	<b>tape</b> 134:3	454:7 456:12	122:10 132:17
296:16 297:9	466:8,15,23	252:18 378:2	<b>terrific</b> 41:2	132:22 139:2,4
297:13 298:9	467:12,13	<b>tariq</b> 3:20,21	<b>test</b> 110:9	141:15 142:7
298:11 301:15	468:3,10 470:3	<b>task</b> 266:18	114:14 115:9	147:3 172:1,5
301:16 302:2	472:12	<b>tecum</b> 6:6	115:11,15	183:10 212:8
302:12 304:21	<b>talcumbased</b>	<b>tee</b> 87:7	116:4,20,23	236:21 257:21
315:15 318:9	400:1,23,23	<b>television</b> 64:17	121:10 122:6	282:16,21
318:12 320:19	<b>talcumdusted</b>	<b>tell</b> 16:16 35:17	140:8 145:19	296:6 342:21
321:17 322:24	28:6	44:11 59:2,4	146:24 148:17	366:7 374:6
323:2,10,19	<b>talk</b> 10:16 13:16	59:10,13 70:7	169:5 306:24	402:4,18
325:7,14	20:1,4 28:11	72:24 78:19,23	415:24 417:21	403:20,23
327:16,23	43:4 44:19	93:18 118:21	418:5,8 420:9	447:16 463:20
328:23 331:12	65:6 87:8	143:8 182:12	452:17 473:2,3	465:1 468:12
334:2 336:21	105:18 208:8	212:1 227:24	476:7	468:20 485:8
336:23 337:8	209:1 216:4	234:13 278:1	<b>tested</b> 119:7	<b>testing</b> 113:18
337:23 338:5	230:23 237:14	313:4 344:5	122:11 123:12	114:12,21,23
339:5,11,17	352:15,16	352:12 375:12	123:19,22	119:16 120:4
340:6 341:19	359:16 447:4	379:22 399:3	125:4 126:3,6	120:11 121:20
342:4 343:13	<b>talked</b> 25:15	402:1,1,5	128:1 129:23	122:6 123:19
343:17,21	42:19 56:2,4,5	420:13 435:14	135:7 143:20	124:1,7,10,20
344:2,21 345:1	56:7 103:16	471:14 479:19	144:15,22	127:18,21
345:6,18,23	132:4,11	<b>telling</b> 131:7	145:3,13 146:5	128:22 129:16
346:10,15	182:14 196:4	172:9 348:14	147:6,8,8,11	129:19 130:1
348:4,15	345:19 348:12	348:18 432:24	147:13,20	130:10 131:8
349:10 350:4,8	362:23 363:1	<b>tem</b> 129:3	148:4 174:9	131:17,22

132:13 134:13	87:13,21,22	339:16 340:7	69:12 76:4	167:6 168:5
134:23 135:2	90:17 93:12,17	342:13 344:18	78:2,24 112:21	170:20,23
137:12,16	94:11 101:20	348:22 349:21	126:20 131:11	179:20 185:19
138:23 140:15	103:17 105:7	354:18 356:24	131:18 138:20	186:18 267:8
142:18,23	105:15 106:2	359:8,8 361:22	139:4 146:18	285:4 327:22
148:23 174:8	110:8 111:15	361:23 362:10	149:7 151:15	347:18,23
181:16 373:19	112:20 115:23	363:23 367:19	151:19 154:9,9	376:4 402:10
378:22,24	117:24 118:12	369:4 371:12	160:5 163:21	403:11 429:19
379:22,24	121:16 130:21	371:14 373:7	170:5 177:19	432:2,5,6
380:2 415:23	131:9 133:5	380:2 388:23	181:18 184:8	436:21 441:14
418:5 448:2,12	134:14 135:17	390:8,13 391:1	184:12 190:2	441:15,21,23
451:18,19	142:13 147:4	391:7,18	194:20,20	442:11
452:2 459:5,15	151:20 153:13	394:11 396:14	205:1,24	<b>theyve</b> 144:10
464:1,5 471:10	159:12,16	397:23 402:23	208:17 211:24	186:12 365:13
471:14	160:8 161:4	403:6 408:11	217:6 220:22	<b>thick</b> 319:15
<b>testings</b> 130:4	165:15 166:3	408:15,20	221:1 223:20	<b>thing</b> 13:8 31:20
374:19	167:13 168:2	409:4,6 413:9	235:15 236:22	59:5 75:13
<b>tests</b> 45:16	179:21 182:7	419:14 420:8	237:18 239:9	103:2,9 120:6
117:15 129:1	185:4,5 189:22	421:3 424:7	239:11,14	144:3 165:13
134:22 250:11	190:10,23	425:10 426:24	241:16 248:3	166:19 203:3
417:8	192:7 193:19	427:3,12	261:1 262:6	212:6 233:7
<b>texas</b> 1:15,19	193:24 194:6	428:10 431:22	274:6 278:14	234:10 261:18
3:13 49:13	195:19,19	436:7 438:23	280:4 288:19	304:12 316:11
<b>text</b> 99:15	198:13 201:3	439:1 440:7,8	300:20 305:12	318:2 329:3
<b>textbooks</b> 63:22	202:10 208:18	440:20,21,23	325:4 329:2	358:16 376:7
<b>thank</b> 40:9	211:12 213:3	441:7,13	331:1,4 332:15	400:11,14
44:17 52:16	217:17 225:8	442:10,13	332:18 336:8	409:8 427:3,16
89:12,16 90:1	229:7 230:5	444:14 445:13	336:16 342:4	<b>things</b> 32:23
93:1 225:15,18	232:9 233:21	446:13,15,18	344:1 368:1	71:9 72:6 77:3
294:9 461:11	233:22 240:15	451:14 453:7	370:17 373:6,9	98:9 108:23
<b>thanks</b> 210:19	243:7,11 244:8	453:11 459:24	379:19 380:1	111:1 114:15
388:3 483:19	246:4 248:7	461:10 465:7	381:10 389:3	127:13 153:20
<b>thats</b> 15:1 18:9	253:10 255:2	468:11 469:19	393:5,5 394:3	165:18 166:4
24:18 25:15,17	260:23 266:7	472:1,21 482:4	395:4 398:16	166:20 167:3
26:18 31:4	267:16 270:14	482:14 483:1	408:1,24 409:2	170:8 171:6,8
34:11,17 36:1	271:20 274:3	<b>theirs</b> 278:14	410:21 413:11	173:12 174:10
36:7 37:13,24	274:21 276:11	<b>theories</b> 30:17	416:18 417:9	176:6 181:17
38:5,7 39:4	277:1,10,12	32:12	422:4,14	182:8 187:24
41:10 47:10	283:17,22	<b>theory</b> 201:5,18	424:19 437:24	195:13 200:18
49:14 50:2	285:1 286:6,8	202:20 203:21	438:23 439:13	200:19 205:17
51:23 53:17,21	291:11 292:6	<b>therapy</b> 273:20	449:20 452:16	210:23 229:5
58:7 61:9 69:9	292:12,17	369:3	466:14 472:22	229:10,24
69:16 70:21	305:2 310:3	<b>theres</b> 13:11	473:2 475:19	248:17 253:12
81:11 82:21	312:19 318:6	16:1 19:11	476:3,8,17	260:7 273:16
83:19 84:5,13	324:10 331:23	22:10 34:12	<b>theyre</b> 78:21	273:23 278:7
84:15 85:17	333:12,17	37:1 40:11,13	84:24 85:22	292:6,13 297:6
86:12,12 87:9	336:9,12	45:14,15,17	119:16 137:7	302:11 303:24

306:3 312:24	381:14 384:24	235:20 236:17	269:16 285:9	<b>today</b> 9:18 10:20
313:1 333:5	388:1 389:12	236:22 237:10	285:12,19,21	12:1 13:17
336:1 354:23	389:16 390:3	257:2 267:23	300:23 315:7	24:6,17 32:1,2
356:11 366:8	390:13 393:24	267:24 268:2	315:11 317:2	42:8 68:2 76:2
377:1 378:19	399:23 401:11	282:3,10	318:3 325:13	77:9,19 81:14
399:13,22	403:2 422:1	288:24 311:22	326:11 327:8	91:24 93:5
400:12 401:4,6	424:20 426:13	<b>threshold</b>	332:24 350:3	130:22 220:10
401:12 404:15	443:20 445:2	168:11,18,22	351:12 352:11	341:19 344:21
404:24 405:5	445:13 451:1	183:1	357:9 361:19	357:15 358:2
405:12 409:12	451:21 459:13	<b>tied</b> 193:8 195:3	362:17 363:4	359:7 375:15
438:4 439:13	465:3,16 471:7	198:4 200:23	364:10 365:19	388:4 389:2
443:5	478:16,19,21	201:9,9,15,17	372:19 378:4,9	442:15 446:4
<b>think</b> 13:4 26:5	479:11 483:16	201:21 202:8	378:20 379:1	447:13 461:6
30:20 32:14	<b>thinking</b> 15:9	203:23 204:6	379:18 388:4	463:5 468:12
33:12,13,16	152:21 318:6	208:13,16	388:10,14	477:17 482:12
35:22 50:7	<b>thinks</b> 33:16	<b>till</b> 67:7 95:20	399:19 410:5	482:23 483:1
54:2 58:15	132:21	281:23 324:23	422:7,16	483:14
59:16 61:13	<b>third</b> 26:19 48:3	<b>time</b> 9:5,23	424:24 432:13	<b>today's</b> 9:4
69:4 80:1	94:5 101:8	10:17 26:19	440:12 444:2,6	<b>toilet</b> 436:16
87:10 88:3	112:14 233:13	27:14 37:18	445:18,22	438:3
109:7 133:6	258:11 320:18	44:2 46:7 47:1	455:1 461:17	<b>told</b> 45:8 57:24
148:14 153:16	355:23	47:6,15,18,22	461:21 470:17	87:5 362:3
154:7,11 155:9	<b>thirdparty</b>	48:6,10 49:22	473:18 475:10	463:17 480:4
157:21 161:12	130:1 137:21	50:13 52:1,7,9	484:4 485:8	<b>tool</b> 286:13
173:2 190:12	<b>thirtythree</b>	52:13 53:9	<b>timeout</b> 171:24	<b>top</b> 38:17 167:1
194:20 195:19	225:5	54:7 59:18	171:24	332:8
196:4 197:19	<b>thompson</b> 2:3,4	61:22,24 66:24	<b>times</b> 65:9 78:8	<b>topic</b> 14:12
198:17 205:24	42:2,4,5,12	72:8 89:18,22	172:6 184:3	395:1
222:20 241:12	43:22 477:17	90:6,19 96:5	269:12 290:14	<b>total</b> 75:13
245:24 246:13	481:18	97:20 107:5	299:9 300:7	97:21 108:17
246:19 261:23	<b>thompsons</b> 42:8	108:16 111:23	334:1 475:9	259:2 296:11
262:6 271:12	<b>thought</b> 12:23	112:8 114:13	<b>timing</b> 211:23	358:4,21
281:4 283:5	15:24 16:6	115:6 123:9	212:16	<b>totality</b> 100:8
285:2,7 289:2	97:23 135:8	129:14 139:7	<b>tinto</b> 471:16,23	456:1
300:3 304:11	281:24 285:8	139:12 143:11	<b>tired</b> 380:17	<b>touched</b> 446:23
316:9 317:6	321:8 330:6	155:4 172:23	<b>tissue</b> 212:20,21	<b>tough</b> 472:21
318:15 325:4	342:18,21	186:2,3 188:20	215:2 407:17	<b>toxic</b> 167:6
326:4,23 327:4	393:22 424:4	188:24 189:13	409:16 433:8	169:22
328:17 332:21	425:1,5 455:22	190:1,14,14	434:12 436:22	<b>toxicity</b> 179:23
333:4 337:2	480:4	203:11 212:5	440:7,11,18	<b>toxicology</b>
343:1,21 344:5	<b>thousand</b>	213:12,16	441:1,5,7	384:24
346:12,13	215:22 305:6	218:5,11,20	<b>tissues</b> 434:14	<b>toxin</b> 325:21
353:3 361:22	<b>thousands</b> 408:5	219:19 237:13	435:16,18	<b>toxins</b> 166:21
362:3,10	<b>three</b> 10:2 47:8	243:20 245:19	437:3	<b>trace</b> 183:11
364:17,24	69:4 78:8	247:9 252:12	<b>titanium</b> 7:13	432:9 433:4
365:2 367:20	101:7 227:1	252:21 253:2	<b>title</b> 295:1 355:4	<b>traced</b> 442:16
371:5,6 379:14	234:16 235:6	254:24 265:22	447:21	442:17

<b>track</b> 191:2	<b>tricky</b> 38:20	<b>tubal</b> 197:24	323:22 381:15	<b>understand</b>
<b>tract</b> 191:15	<b>tried</b> 108:15	202:22	446:4,24	10:19,23 14:15
192:17,23	306:5	<b>tube</b> 8:7 272:8	450:24 465:19	27:4,6 34:4
193:9 229:7	<b>trouble</b> 51:3	382:16	467:11,12	35:6 38:2
336:18 387:2,8	<b>true</b> 38:10 41:22	<b>tubes</b> 193:7,8	477:18,19	44:22 48:15
387:9 436:14	42:2 55:21	195:3,3 198:4	<b>twoyear</b> 44:10	49:18 53:15
436:20 437:15	57:6 58:7	200:23 201:9,9	<b>type</b> 36:21 38:20	61:13 62:21,21
440:22 474:3	59:11,24 60:6	201:15,17,21	39:6 69:17,19	76:2 82:11
<b>tracts</b> 438:18	62:13 63:10,19	202:8 203:23	97:4 150:14,20	83:15 86:18
<b>traditionally</b>	63:22 64:2	204:6 208:12	151:2,5 238:6	89:1,2 92:12
297:9	82:22 116:5	208:16 440:13	239:4 242:9	95:24 105:22
<b>training</b> 42:16	125:23 130:24	442:12,19	248:4 270:7	115:11 116:18
<b>transcript</b> 24:4	133:16,19,24	456:24 473:7	409:16 432:4	127:12 130:22
485:7	134:11 135:4	473:19	451:18 473:23	131:12 138:3,4
<b>transcription</b>	139:19,22	<b>tucker</b> 3:20	479:23	139:17 144:14
486:5	146:24 167:21	<b>tuckerellis</b> 3:21	<b>typed</b> 37:8 38:6	144:18,19
<b>translocation</b>	182:1 188:15	<b>tumors</b> 21:3	38:9 69:22	146:10 152:10
430:3,10,20	191:2,24 194:5	241:2,3,11,12	97:8	167:9 182:13
<b>transmission</b>	201:5,18	242:8	<b>types</b> 116:15	184:17 193:15
133:19 419:13	202:22 216:23	<b>turn</b> 143:14	150:17 241:3,7	199:13 203:11
451:20	217:8,15 224:6	226:13 371:1	412:9 416:19	248:22 249:13
<b>transport</b>	225:24 227:6	385:20 394:12	417:13	250:17,20
227:10	234:4 236:10	394:16 418:22	<b>typist</b> 53:18	251:10,14
<b>travel</b> 193:22	244:5,8,14	448:10 449:19	97:14	252:10 269:19
194:4,23	252:4 265:17	450:6 455:10	<b>typos</b> 98:1	282:15 285:23
195:13	266:18 271:8	<b>turned</b> 96:13		286:21 298:7
<b>traveling</b> 194:10	273:20 282:6	172:22	<b>U</b>	300:4 349:18
<b>treat</b> 12:21	283:21 336:21	<b>tv</b> 64:1	<b>ubiquitous</b>	369:20 371:16
47:17 48:23	343:15 352:10	<b>tweaks</b> 97:23	417:13 474:14	371:22 376:16
272:15	355:1,9 357:3	<b>tweeted</b> 462:18	474:22 475:5,7	377:12 380:18
<b>treated</b> 47:22	371:18 469:16	<b>twentyfour</b> 60:1	<b>uhhuh</b> 55:24	384:15,20
48:1 156:1	469:19	<b>twice</b> 170:22	99:17 101:10	402:21 404:1
<b>treating</b> 47:1,3	<b>truly</b> 347:15	189:1	199:18,21	406:10,12,13
52:2,9,14	<b>truth</b> 485:5,5,6	<b>twine</b> 237:18	210:17 211:2	406:16 416:18
73:11 155:24	<b>truthful</b> 353:3	<b>two</b> 7:6 45:4	250:1 339:15	419:17 420:5
187:4	353:14	49:2 101:7	392:2 414:8	433:23 442:14
<b>treatment</b> 56:6	<b>try</b> 10:16 31:24	110:13 140:22	<b>ultimately</b>	463:24 466:7
274:10	117:5 220:4	176:10 191:6	397:15 456:14	469:4
<b>treatments</b>	260:16 333:3	205:16 215:22	<b>unaware</b> 77:10	<b>understandably</b>
350:13 351:24	344:8	227:1 229:9	<b>uncertain</b>	334:8
<b>tremolite</b> 117:10	<b>trying</b> 14:10	236:22 239:6	276:19	<b>understanding</b>
117:11,11,12	29:4 38:19	239:14 242:6	<b>uncertainty</b>	16:13,17,24
117:12,13,17	53:14 62:21	251:5,7 257:1	274:6,11	17:14,20,23
117:18,24	130:21 199:4	258:21 261:17	<b>unclear</b> 137:24	20:17,20 24:18
118:1,7,8,21	211:4 212:15	267:22 268:1	<b>undergone</b>	25:11 27:15
<b>trend</b> 331:8	236:14 246:14	277:18 283:2,6	188:11	34:10 43:21
<b>trial</b> 28:13	277:12 464:9	292:19 305:6	<b>underlying</b> 40:6	70:11 80:18



81:2,13 89:4 96:22 167:10 168:1 169:12 180:3 181:23 187:10 222:18 262:15 269:4 301:11 317:19 318:11 328:16 361:14 375:9 466:11 468:21 469:2 <b>understood</b> 11:3 24:11 39:13 220:10 343:11 464:24 <b>undertake</b> 251:3 312:16 <b>undertaken</b> 349:10 <b>undertook</b> 349:15,19 <b>underwear</b> 206:3 335:8 <b>unethical</b> 28:8 28:12,17 <b>unexposed</b> 259:4 <b>unfortunately</b> 310:7 <b>united</b> 1:1 124:19 449:2 <b>universally</b> 221:19 222:11 223:5 459:5 <b>unpublished</b> 235:21 236:17 <b>unquote</b> 199:15 <b>untoward</b> 40:19 <b>untruthful</b> 353:9 <b>update</b> 53:11 234:22 302:5 362:4 <b>updated</b> 52:21 53:13 54:4 72:8 279:13 282:18	<b>updates</b> 279:1 <b>upper</b> 263:1 437:14 <b>uptodate</b> 6:7 12:11,18 13:2 13:7,11 31:22 33:1,8,13,19 34:1,4,7,16 106:3 269:21 366:4 <b>urban</b> 476:3,16 <b>usage</b> 7:8 472:12 <b>use</b> 7:5,18,21 8:4 29:24 32:3 37:14 45:7 56:2,24 59:3 59:11 89:8 106:5,20,23 107:1,22 108:16,16 110:17 126:23 133:23 142:1,4 153:10 162:18 170:19 173:9 181:10 185:16 189:8 203:23 203:24,24 204:18 205:5 209:13 234:20 237:6,13 241:5 245:9 248:18 249:9 251:22 251:22 253:15 253:22 264:10 265:17,21,22 265:22,22 266:18 267:6 267:16 268:5,6 274:2,14 286:12,17,19 289:4,9 290:15 290:24 291:4 292:14,20 293:21 294:24 295:18 298:9 301:14 302:1,2 304:21 308:3	308:17 309:19 309:23 310:1 310:10 313:21 315:15,17 317:19 318:16 318:20 319:4 320:19,21 322:8,10 323:1 323:10,19 324:23 325:14 328:12,23 330:5,7 331:3 332:3,5,23 334:6,21 337:23 345:1,7 348:4,15,18,19 350:9 352:10 356:13,15 357:2,12 361:6 361:12 368:6 400:18,23 401:13 404:21 405:2 406:3 416:21 420:23 433:8 434:13 435:17 436:17 450:13 472:5 473:11,12 <b>user</b> 318:10 <b>users</b> 297:9 317:2 <b>uses</b> 67:13 108:1 109:11 163:3 164:22 181:10 190:17 205:19 206:15 298:10 299:4 337:16 <b>usually</b> 13:9 34:13 241:16 343:6 358:15 <b>uterus</b> 439:23 440:8,19,23 441:3,8,15 442:9,19	<b>vacation</b> 47:9 <b>vagina</b> 192:12 192:22 193:5,9 193:22 194:4 194:10,19 195:16 230:3,8 232:6 387:11 388:2 437:14 441:2,5 443:1 443:14 456:23 <b>vaginal</b> 387:2,8 387:9,10 442:2 442:18 <b>vague</b> 137:24 <b>validity</b> 106:9 <b>variable</b> 327:4 <b>various</b> 114:13 114:13 116:15 241:14 361:21 418:5 <b>varying</b> 169:6 240:23 242:8 <b>vast</b> 440:2 <b>verbal</b> 85:9 <b>verbatim</b> 485:7 <b>verification</b> 262:12 <b>verify</b> 173:16 263:4 427:2 <b>vermillion</b> 46:2 46:8,21 47:15 47:19 48:16,19 48:20 50:6,9 50:18 354:7 <b>vermont</b> 135:22 379:14,15,23 <b>versa</b> 243:1 <b>version</b> 8:9 117:19 118:2 172:24 258:4 272:10 275:19 <b>versus</b> 21:1 153:17 163:2 189:7 247:24 271:3 328:1 <b>vice</b> 243:1 <b>vicinity</b> 423:4	<b>videographer</b> 9:2 89:17,21 139:6,10 213:11,15 252:20,24 315:6,10 378:3 378:7 388:9,13 444:1,5 445:17 445:21 461:16 461:20 484:2 <b>videotaped</b> 1:12 6:5 <b>view</b> 19:11 121:5 164:9 171:5 209:12 362:20 <b>viewing</b> 393:17 <b>vintage</b> 136:18 <b>virtually</b> 391:14 <b>virus</b> 166:23 <b>vitae</b> 6:13 <b>vital</b> 434:3 <b>vitamin</b> 433:21 <b>vitro</b> 14:14 106:8 220:5 268:16 269:1 384:6 <b>vivo</b> 269:1 384:7 <b>volume</b> 7:12 361:18 430:14 431:12,14,19 454:20 <hr/> <b>W</b> <hr/> <b>w</b> 4:3 <b>walking</b> 195:18 436:17 474:17 <b>want</b> 10:1 13:8 13:10 39:3 40:20 44:19 58:15,16 76:1 76:3 77:22 78:6 85:6,12 86:17,21 87:6 119:11 129:15 137:11 138:19 138:21 176:7
--	---	---	---	--

192:15 198:14 203:2,3,10,11 208:21 212:5 224:18,24 225:13,20 230:23 231:6 244:12 245:6 251:14 253:7 263:22 296:19 299:13,13 305:5 332:20 361:24 364:13 364:14 370:23 371:22 377:12 383:6 390:14 390:23 397:17 397:23 424:24 427:1 438:1 443:23 444:9 467:5 472:12 <b>wanted</b> 51:6 60:21 61:21 66:4 71:5 220:2 265:4 295:23 313:1,1 358:19 <b>ware</b> 328:9 <b>warehouses</b> 135:12 <b>warn</b> 411:5 <b>washington</b> 4:4 <b>wasnt</b> 33:7 56:20 57:20 59:18 118:5 150:18 152:21 153:9 212:23 215:4 236:12 242:13 248:7 266:11 267:12 280:9 293:2 322:18 346:6 357:14 363:5 438:10 444:13 <b>waste</b> 212:5 424:24 <b>wasting</b> 269:15 300:23	<b>watch</b> 326:10 <b>water</b> 421:14 422:7,16 450:4 <b>way</b> 24:13 71:10 149:17 153:3 166:5,14 195:2 204:4 217:11 220:5 255:7 267:19 325:4 326:2 327:14 337:9,11 366:13,15 401:16,16 443:3 455:8 457:4,6 459:9 <b>wayne</b> 480:2,7 <b>ways</b> 381:15 <b>weak</b> 222:22 223:12 226:9 227:11,22 <b>weaknesses</b> 270:9 <b>website</b> 128:20 272:7 351:14 359:10,14,18 362:4 365:20 446:5 447:22 449:12 <b>websites</b> 361:3 <b>wed</b> 394:6 <b>week</b> 49:7 170:22 <b>weekly</b> 190:18 <b>weeks</b> 47:8 90:13 279:13 282:19 <b>weigh</b> 246:22 <b>weight</b> 137:19 138:9,14,21 197:1,9,14 254:18 268:9 268:18 269:19 269:20 270:2 275:2 277:7 278:3 281:18 290:5 334:11 382:21 383:3	<b>weighted</b> 264:3 270:6 <b>weighting</b> 126:14 <b>weil</b> 2:18,19 3:2 3:3 <b>weiss</b> 320:23 <b>welcome</b> 18:19 26:21 86:1 89:24 <b>wellknown</b> 352:9 <b>welt</b> 293:2 <b>went</b> 45:19 48:21 64:1 81:3 155:15 200:7 229:14 334:3 <b>wera</b> 8:5 <b>west</b> 2:14 <b>weve</b> 25:14 31:15 35:19 36:4 66:19 67:19,20 79:6 88:17 97:4,16 139:4 140:22 158:1 210:8 224:13 232:19 272:5 294:17 358:1 <b>whats</b> 51:19 77:5 78:23 87:21 114:9,11 134:22 185:6 190:19 198:24 215:19 268:8 277:20 325:24 332:22 333:24 349:3 371:12 372:21 389:1 397:9 425:12 428:2 449:10 <b>whens</b> 66:17 <b>whi</b> 317:10 <b>white</b> 296:13 297:1,10 <b>whites</b> 8:12	292:11,16 <b>whos</b> 190:24 363:14 365:24 472:24 <b>wikipedia</b> 104:18,20 105:2,9 <b>wilson</b> 420:13 <b>wiping</b> 195:17 <b>withdraw</b> 203:9 <b>witness</b> 9:7,9 10:8,10 17:5 18:20 19:4 23:22 44:24 50:20 57:3 62:12 79:4 83:18 86:6 88:9 92:21 112:3,7,10 120:16 126:15 128:13 132:9 136:24 138:1 141:8,12,24 143:15 144:5 174:1 202:17 203:5 207:7,11 208:6 210:17 215:21 216:2,9 225:5 233:5 238:15 240:5 247:18 287:18 294:1 300:9,16 320:1,4,8 346:3,6 349:5 383:17 386:3 386:13 389:18 389:22 391:24 392:7 394:13 397:18 424:7 425:10 426:19 430:7 438:13 460:12,24 461:3 483:23 <b>witnesses</b> 93:15 401:20 <b>witnesss</b> 76:19 <b>wolf</b> 1:13 5:1,6	6:1,5,15 7:1 8:1,18 9:3,8,14 11:11 18:16 26:21 27:6 36:22 37:15 38:2,4 39:12 40:1 41:4,19 45:24 57:4 62:20 80:1,9 83:8,13,17 84:22 85:22,23 86:4 88:15 89:3,12,24 90:2 93:4 102:22 110:16 113:13 114:18 120:3 121:19 128:18 129:10 129:12 132:6 137:10 139:14 141:15 146:10 149:15,18 156:21 167:10 170:13 172:9 178:13 198:16 199:14 213:20 216:6,12 230:12 231:24 234:3 236:15 243:4 253:4 267:20 277:22 280:11 300:24 301:7,8 315:13 340:4 351:2,5 357:17 370:23 378:11 380:6 388:4,17 409:9 418:17 423:19 432:18 444:8 446:3 454:6,24 455:11 461:11 461:24 468:6 470:23 472:20 475:21 482:10 484:4 485:5 486:12 <b>wolfs</b> 107:16
---	---	--	---	---

147:2	316:18,19,19	43:1,3 44:24	329:19,24	68:15 113:6,10
<b>wolfson</b> 401:19	316:20,22	49:23 50:4,4	375:2 387:6	143:22 179:16
435:14 456:15	317:11,17,20	50:10,13,20	390:14 460:22	225:15 230:18
<b>woman</b> 107:12	318:23 319:4	61:16,19 73:10	<b>write</b> 64:8 98:5	238:17,18
108:1,19,21	320:21 321:3,4	99:5 121:24	100:10 142:24	239:14 242:18
109:10 162:24	321:5,14,16	122:1,7 166:4	353:4,12	263:2 269:23
163:1 164:22	322:8,9,23	166:21,22	354:11 360:1	273:18 275:12
171:10 181:3	323:9,19	167:11,18	361:24 362:8	319:9,24
181:12 189:13	325:15 342:21	207:11 220:15	385:23	320:13 330:19
193:6 195:1	343:1,5 345:7	220:20 272:13	<b>writing</b> 72:6	347:11 388:7
201:15 205:12	348:4 352:17	343:24 349:12	96:15 104:2,17	392:14 394:18
205:19 206:1,7	352:22,23,24	349:20 357:17	160:12 245:17	422:13 424:22
208:2,23	353:4,17	358:7,21 359:2	246:6 353:17	427:18 429:21
209:12 460:19	354:20 387:1,7	360:3 362:13	354:4,10	442:7 450:5
464:10 473:24	387:8,9,12	363:10 382:5	389:10	459:12 461:13
<b>womans</b> 64:23	400:18 401:1,3	382:11 386:3	<b>written</b> 203:6	<b>year</b> 31:19 36:12
166:15 167:19	401:13,23	395:16,24	386:12 446:18	47:8 49:5
169:17 174:15	404:21 405:2	396:11 463:11	<b>wrong</b> 30:10	106:14 306:12
176:4,9 180:9	405:19,20,21	481:5	148:9 239:10	306:21,21,24
189:8 190:13	406:2,11 408:5	<b>worked</b> 47:19	285:4 319:22	308:10 314:21
204:13 241:6	408:13 411:5	63:8 480:2	<b>wrongful</b> 10:2	325:1 332:11
439:22	420:23 422:6	<b>working</b> 12:23	<b>wrote</b> 98:11,18	362:14 401:19
<b>women</b> 42:22	422:15 423:3,7	43:9 45:24	100:2,19	478:6,21
45:15 56:24,24	423:15 426:5	46:1 49:6 50:1	171:22 172:11	479:12
159:6,17 161:8	428:15 429:1	50:6 51:16	228:3 236:12	<b>years</b> 10:2 20:23
161:12,15	433:8,9 434:13	52:7 53:10	351:3 354:16	45:4 48:2 55:1
163:23 164:2,8	434:14 435:16	159:2 169:15	469:23	55:11 59:22
164:21 170:19	435:18 437:3	227:9 352:14	<b>wu</b> 8:13 234:17	60:1,2 62:22
196:7 197:7,24	440:2 441:10	354:6 364:20	235:9 238:12	63:10,11 64:7
200:22 202:7	445:2 473:17	376:18 386:7	238:15,21	108:16 148:23
202:22 203:16	474:16	426:1 428:20	239:16 292:3,7	170:23 186:10
203:23 209:3	<b>womens</b> 55:10	429:8 430:15	292:13,23	190:18 199:7
209:11 227:11	63:9,13,18,24	430:18 455:12	293:19,22	228:10 280:5
234:20 235:1	236:23 237:1	464:10 478:23	294:2,17,21	283:2,6 316:14
238:8 254:23	257:8 265:24	479:6	295:1 296:4	317:12 318:18
256:9,13	321:9,12 324:2	<b>workproduct</b>	297:7 312:9,13	322:3 324:5,20
259:21,24	324:13,18	84:7	329:20,21	324:23 325:2,2
292:10,15,24	353:5,13	<b>works</b> 97:13	330:1	325:3,18,19
293:20 294:22	364:21 365:3	166:13 169:12	<b>wus</b> 239:12	326:6,18
295:24 296:11	366:1 438:18	<b>workshop</b> 385:7		330:10,21
296:23 297:1,8	<b>word</b> 61:9 71:2	<b>world</b> 341:10	<b>X</b>	331:1,3,9,21
297:10,18,21	464:2	379:21	<b>xrd</b> 115:9,15	366:1 379:11
297:22 298:1	<b>wording</b> 156:18	<b>worrisome</b>	451:20	399:5 439:22
298:18 301:13	<b>words</b> 99:24	181:20,23	<b>Y</b>	477:19 480:15
301:17 302:1	102:15 455:16	<b>worry</b> 58:1	<b>yeah</b> 37:6 44:17	<b>york</b> 3:4,4
302:23 303:2,5	<b>work</b> 10:4 30:13	<b>wouldnt</b> 160:15	44:21 50:15	<b>youd</b> 18:18
304:3 315:17	39:21 41:22	237:2,3 244:12		77:19 86:2

116:4 122:21	218:6,17	476:1,1,16	473:8	445:22 450:6
143:14 156:3	222:19 228:21	477:20 481:22	<b>100</b> 6:16 85:16	<b>162738</b> 1:4
237:15 300:20	230:1,11	482:12	320:6,8	<b>16th</b> 93:11 94:21
312:14 331:1	235:22 251:8		<b>101530119</b> 3:4	96:17
353:14 368:21	262:16,17	<b>Z</b>	<b>11</b> 6:4 7:4 139:7	<b>17</b> 2:19 8:4
397:23 413:17	269:13,15	<b>zero</b> 325:3	139:8,9,12	221:17 247:15
462:6	271:11 275:10	<b>0</b>	198:16,21	247:16
<b>youll</b> 24:15	287:8,23 294:6	<b>0</b> 307:2	224:4 330:18	<b>1700</b> 295:24
120:15 233:12	301:17 313:2	<b>000</b> 256:9,15,18	<b>1100</b> 3:21	296:4,11
265:6,14	319:22 325:6	259:20,23	<b>11th</b> 351:2,8	<b>18</b> 8:7 70:12
296:22 389:5	330:22 335:6	371:14	<b>12</b> 6:7 7:7 69:12	139:7,8 272:2
448:10 449:19	338:18 342:2,4	<b>005</b> 307:2	71:21 79:11	272:6 275:16
450:6,7	344:5 355:12	<b>02</b> 388:10,11	210:9 213:12	449:12,20
<b>young</b> 315:16	370:10 374:4	<b>03</b> 484:5,7	213:13,17,21	450:7,7
316:1,23	375:15 376:16	<b>06</b> 388:12,14	316:8 332:11	<b>19</b> 2:9 8:10
318:13,17	390:5 392:13	<b>07962</b> 3:17	380:13 384:3,4	53:23,23
320:20	393:3 397:7,12	<b>08</b> 1:16 9:5	394:17 449:19	294:11,13,17
<b>youre</b> 10:11	399:18 401:24	<b>085423792</b> 2:20	<b>128</b> 6:17 296:2,7	302:8
16:16,23 18:18	403:11 407:8	<b>1</b>	296:8,12	<b>191036996</b> 3:8
18:23 21:8	414:1 417:19	<b>1</b> 6:4 7:14 11:12	<b>13</b> 7:11 72:11	<b>1970s</b> 120:4,12
23:12 26:21	422:4,14	11:15 38:21	74:10,18 77:8	121:11,21
27:15 28:12,22	425:18 427:2	39:17 67:20	78:4 79:3	123:14,23
29:2 34:23	430:5 433:13	68:3 213:14,16	80:10 224:15	124:3,11
51:21 61:8	434:18 440:24	259:6 262:1,8	225:6,11,17	126:21 127:18
69:13 75:19	453:8 473:14	283:16 287:24	319:13 424:3,8	130:11
77:9 79:2	475:9 482:20	287:24 330:9	424:10 449:20	<b>1971</b> 215:22
80:23 81:11	<b>youve</b> 32:20	330:22 332:1	454:22	<b>1975</b> 120:8
82:10 83:2,11	33:3 34:8 35:1	347:9 368:10	<b>14</b> 7:14 232:20	<b>1976</b> 143:2,5
83:14 85:1	39:20 41:9	368:10,21,21	233:1 238:21	144:22 145:6
86:1,4 87:12	51:16 54:3,5	369:1,1,1,10	239:22 275:1	145:19 146:5
92:12 95:6	55:2,16 65:14	369:14,15,16	275:14,17	146:24 147:20
96:22 102:10	68:2,13 85:1	369:22 370:5,5	<b>1413</b> 306:18	148:10 321:6
108:6 109:13	90:14 92:19	370:21,21	<b>1414</b> 239:2,6,9	<b>198</b> 7:4
116:4,9,22	93:19 120:18	371:13,13,18	303:20	<b>1982</b> 321:7
117:9 118:15	121:7 135:2,19	371:19,20	<b>1416</b> 310:19,20	323:1
120:14 123:11	146:11,21	<b>10</b> 6:19 89:18,19	<b>1490</b> 2:14	<b>1989</b> 320:23
125:9 129:12	147:18 183:4	89:20,22	<b>15</b> 7:16 81:4	<b>1990s</b> 134:14,17
130:17 131:21	299:8 300:6,12	156:22 157:1	186:9 224:14	<b>1991</b> 141:19
132:12,24	358:5 366:15	157:17,19	225:9,10	142:3,8
133:7 134:16	386:7 389:13	158:2 193:16	238:22 302:10	<b>1992</b> 17:16
136:1 137:11	389:17 394:4	224:4 340:17	326:6,18	<b>1994</b> 385:7
145:4 149:20	398:8 401:22	369:1 424:2	334:14 367:20	<b>1995</b> 17:17
162:20 167:19	405:1 408:3	425:19 427:3,5	<b>1510</b> 3:12	481:15
169:7,13 172:1	410:7,11	427:11 428:6	<b>157</b> 6:19	<b>1996</b> 17:19
179:5 180:6	411:23 446:19	429:20 431:2	<b>16</b> 7:21 36:3	213:22
186:14 205:23	447:13,14		95:6 101:5	<b>1st</b> 49:21 51:4
207:3 209:6	457:9 461:6		245:1,2 445:20	479:7,9

<b>2</b>	<b>2009</b> 127:21	41:22 44:7	322:9,11	<b>30s</b> 21:21
<b>2</b> 5:3 6:7 12:7,8	128:1 129:20	49:19 52:22	323:10,19	<b>30year</b> 317:2
12:16 13:19	<b>20092010</b>	53:16 236:6	<b>256</b> 157:5	<b>31</b> 6:8
33:2,8 34:8	128:23 471:3	<b>2018</b> 36:4 49:21	158:24 425:17	<b>3108468</b> 3:4
35:1 105:17	<b>201</b> 2:19	51:1,4,15	425:24 428:12	<b>33</b> 89:20,22
139:11 252:21	<b>2010</b> 127:21	53:17,20 93:11	<b>26</b> 6:14,16	225:1,21 226:8
252:22,23	128:1 129:20	94:21 95:6	252:23 253:2	<b>334</b> 2:5
253:2 287:24	187:23 222:20	96:18 235:2	<b>2670058</b> 3:18	<b>3381100</b> 2:15
303:20 308:20	224:6,24 228:3	278:13 279:14	<b>2692343</b> 2:5	<b>339</b> 198:14
347:10 369:1	245:10,22	280:9 479:10	<b>27</b> 139:9,12	200:20
371:18,19	246:9 319:23	479:14	<b>272</b> 8:7	<b>34</b> 308:23
375:13,16,19	320:7 430:14	<b>2019</b> 1:9 5:2 6:2	<b>2738</b> 1:7	309:11,17,17
448:11	454:21 455:13	7:2 8:2 9:4	<b>274</b> 426:12	309:21,23
<b>20</b> 8:14 74:12	455:16 469:20	12:12 53:22	<b>277</b> 455:10	<b>35</b> 6:11 330:10
76:16 78:3	470:4	485:19	<b>28</b> 113:14 114:2	331:2,5
81:4 97:21	<b>2012</b> 425:20	<b>202</b> 4:4	114:7,10,21	<b>350</b> 3:17 8:14
199:7 316:14	428:5 430:16	<b>2060</b> 371:4	120:20,24	<b>353</b> 8:17
317:1,12	431:5,15,20	<b>20someodd</b> 74:9	132:8,11	<b>36</b> 6:12 308:24
318:17 324:5	457:10	<b>21</b> 8:17 89:18,19	138:10 139:22	310:9 321:7,21
324:19,19,23	<b>2013</b> 451:3	252:21,22	140:2,5,21	322:24 461:17
325:3,18 326:6	<b>2014</b> 7:14 48:5	273:11 274:9	374:6	461:18
326:18 331:5	228:22 229:11	275:1,11,14,15	<b>280</b> 426:10,11	<b>36104</b> 2:5
350:19,20	232:2 234:1	353:20,24	426:20 428:4	<b>388</b> 5:8
352:21 354:9	237:2 303:7	354:15 357:10	429:5,12,17	<b>3910197</b> 3:13
357:10 371:7	304:2,17,18	446:5 462:2	<b>28page</b> 70:21	
375:14,16,19	307:9 308:2,6	<b>212</b> 3:4	71:1	<b>4</b>
380:7,14,15	308:23 309:23	<b>213</b> 7:7	<b>294</b> 8:10	<b>4</b> 6:11 8:15
414:3,10,11,20	310:1,9,13	<b>215</b> 3:9	<b>2b</b> 284:18	35:12,13,19
446:5 462:2	311:5,15,24	<b>216</b> 3:22		36:5 309:11,17
486:16	313:19,20	<b>218</b> 2:4	<b>3</b>	309:23 351:1
<b>200</b> 256:9,15,18	314:9 329:12	<b>21st</b> 279:13	<b>3</b> 6:8 31:8,12	368:10,21
259:20,23	329:18 444:22	<b>22</b> 8:19 427:22	33:3 240:2	369:1 370:5,21
371:14	451:5	428:3	253:1 270:12	371:13 378:4,5
<b>2000</b> 3:8 451:1,5	<b>2015</b> 44:8 45:23	<b>224</b> 7:11	273:11 315:7,8	378:6,8,9
<b>200041454</b> 4:4	46:1 67:7	<b>23</b> 215:11,14	315:9,11	383:2,7,8
<b>2000s</b> 451:1	235:9 351:3,8	216:22 217:3	368:10,21	391:5 394:11
<b>2003</b> 451:2,3	352:3,8 354:17	<b>233</b> 7:14	369:1,14 370:5	394:17 399:9
<b>2005</b> 67:1	356:12 357:1	<b>238</b> 7:16	370:21 371:13	<b>40</b> 315:9,11
<b>2006</b> 31:11	<b>2016</b> 53:6	<b>24</b> 60:2 62:22	371:20	325:18 347:12
455:2 469:23	197:20 198:12	63:10 64:7	<b>30</b> 59:22 97:21	371:5 378:4,5
470:10	198:16 200:8	214:21 215:3,8	199:7 228:10	<b>40s</b> 316:20
<b>2007</b> 207:4,24	207:12,18	216:17 315:7,8	309:15 318:17	<b>41</b> 213:14,16
281:23 282:9	235:9,9 239:17	<b>245</b> 7:21	321:6 366:1	379:3 450:2,8
282:14 287:13	240:8,9 278:11	<b>247</b> 8:4	371:5	459:6,14 460:5
287:17 469:23	280:8 329:22	<b>25</b> 259:6 262:1,8	<b>305</b> 319:13,20	460:8,16,20
<b>2008</b> 281:23	451:4,15	315:18 319:5	320:5	<b>411</b> 226:13
	<b>2017</b> 37:3 38:5	320:22 321:15	<b>3050</b> 290:22	<b>42</b> 253:8,10

309:15 379:3 450:3 459:6,14 460:6,9,20 <b>427</b> 8:19 <b>429</b> 259:2 <b>43</b> 450:3 <b>44</b> 213:12,13 450:3 461:19 461:21 <b>441137213</b> 3:22 <b>446</b> 5:9 <b>45</b> 210:9 450:3,8 <b>46</b> 245:7 262:19 262:22 <b>461</b> 5:10 <b>4632400</b> 4:4 <b>47</b> 373:13,14 415:10,15 416:24 418:23 420:12,14 <b>470</b> 5:11 <b>482</b> 5:12,13 <b>485</b> 5:15 <b>486</b> 5:16 <b>487</b> 5:17 <b>488</b> 5:18 <b>4th</b> 1:15 35:22 52:22 53:20	<b>52</b> 6:13 378:6,9 444:4,6 <b>54</b> 445:18,19 <b>55</b> 321:6 <b>55yearold</b> 318:9 <b>5milligram</b> 333:1 <b>5th</b> 12:12	<b>8</b> <b>8</b> 6:16 99:14 100:19,21,22 102:12 255:15 260:5 261:13 331:5 371:3 485:19 <b>80</b> 315:17 319:3 320:21 321:15 322:8 <b>816</b> 3:12 <b>83</b> 358:6,22		
<b>5</b> <b>5</b> 6:12 17:13 25:16 36:18 38:3,10,13,21 39:17 40:4 41:20 310:9,13 347:9,10 383:2 383:7,8 388:10 388:11,12,14 444:2,3,4,6 445:18,19 <b>50</b> 48:4,7 <b>500</b> 1:14 <b>501</b> 2:14 <b>50s</b> 316:20 <b>51</b> 310:13 444:2 444:3 <b>512</b> 3:13	<b>6</b> <b>6</b> 6:13 52:21,23 53:15,20 258:2 258:4 287:24 290:21 445:20 445:22 461:17 461:18,19,21 <b>60</b> 52:4 111:14 111:18,23 121:6 124:22 125:4,6,9,20 126:2,6,11 131:7,10 371:8 371:10 <b>600</b> 38:5 358:9 358:22 <b>609</b> 2:20 <b>60s</b> 438:8 <b>61</b> 321:7,21 322:24 <b>619</b> 2:15 <b>66</b> 6:14 <b>6963675</b> 3:22	<b>9</b> <b>9</b> 1:16 5:4,7 6:17 9:5 112:13 128:15,19 129:5,5,7,10 129:15 447:20 448:11 470:22 470:24 471:1 471:18 <b>90plus</b> 411:18 <b>90s</b> 16:14 378:24 <b>91</b> 374:7 <b>92101</b> 2:15 <b>92660</b> 2:10 <b>93</b> 7:12 454:21 <b>943</b> 259:3 <b>949</b> 2:10 <b>950</b> 3:21 <b>96</b> 216:12 <b>973</b> 3:18 <b>975</b> 4:3 <b>9861104</b> 2:20 <b>9882706</b> 3:9 <b>99</b> 259:8		
	<b>7</b> <b>7</b> 1:9 5:2 6:2,14 7:2 8:2 66:12 66:13,19 96:17 97:5,17 98:6,7 98:14 274:9 484:5,7 <b>70s</b> 378:24 438:9 <b>71</b> 216:8 <b>7200</b> 332:3,4 <b>7201288</b> 2:10 <b>767</b> 3:3 <b>78701</b> 3:13 <b>7th</b> 9:4			